

JULY, 1874.



81.50 a YEAR.

OFFICE, No. 9 NORTH STREET,
Near Baltimore St.

TO FARMERS AND GARDENERS.

\$1,000 REWARD TO ANY ONE that can find by analysis or otherwise any adulteration whatever in my manufacture of Bone.

No heavy Bones taken out for Bone Black, or other purposes.

The First Manufacturer in America that sold **GROUND BONES** by **WEIGHT**.

PURE BONE DUST AND

BONE MEAL

from Slaughter-house Bones, twenty-five years the standard for purity and excellence.
CHEMICAL LABORATORY OF P. B. WILSON, No. 32 SECOND STREET, BALTIMORE, July 30, 1873.

Joshua Horner, Jr.—Dear Sir: The following is the result of analysis of a sample of your Bone Dust drawn by myself from a lot of seven tons lying in your warehouse:

Moisture, (deter. at 212° F).....	3.74 per cent.
Organic Matter.....	40.12 per cent.
Containing—Nitrogen, 4.68; Ammonia 4.93	
Inorganic Matter	56.14 per cent.
Containing Phosphoric Acid.....	24.52 per cent.
Containing Bone Phosphate of Lime	53.52 per cent.
Insoluble Matter.....	2.51 per cent.

This is the BEST SAMPLE OF BONE DUST I CAN FIND IN THE MARKET, and call your especial attention to the LARGE PERCENTAGES OF VALUABLE MATERIAL for the improvement of the soil, and to the SMALL PERCENTAGES of moisture and insoluble matter

Respectfully, etc.

P. B. WILSON, *Analytical and Consulting Chemist.*

PREPARED FOR DRILLING, AND PACKED IN BAGS, 167 LBS. EACH, AT \$15 PER TON.
DISSOLVED OR VITRIOLIZED BONE, \$48 PER TON. BONE ASH, GROUND AND DISSOLVED,
\$42 AND \$48 PER TON. FARMERS' SUPPLIES.

JOSHUA HORNER, JR.

54 S. Gay Street, 178 Forrest Street and Corner Chew and Stirling Streets, BALTIMORE, MD.



We will purchase and have carefully shipped, by whatever mode of transportation may be designated:

FERTILIZERS of every description sold in this market—and there is, probably, no other city in the Union which offers better facilities for this purpose. We will buy, and deliver from the Peruvian Agent's Warehouses, whenever the order is sufficiently large to warrant it,

PERUVIAN GUANO.

Also the various **PHOSPHATIC GUANOS** imported into this port; **BONE DUST** from the best manufactures of this vicinity or the cheaper kinds from a distance, as may be ordered by the purchaser;

Land Plaster, Oil Vitriol, and all Chemicals Required

In the manufacture of **HOME MANURES**, or **SUPERPHOSPHATES** from the most reliable factories.

FRUIT and **ORNAMENTAL TREES**, **SHRUBBERY**, Field, Garden and Flower **SEEDS**.

All kinds of **AGRICULTURAL IMPLEMENTS** and **MACHINERY** at manufacturers' prices. Likewise,

Cattle, Horses, Sheep, Pigs, Poultry, &c.

Of the improved breeds. In this vicinity, in some particular kinds of stock, a better selection can be made than elsewhere, and special attention will be given to buying and forwarding such animals as may be ordered.

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THE AMERICAN FARMER.

"O FORTUNATOS NIMIUM SUA SI BONA NORINT
"AGRICOLAS." *Virg.*

PUBLISHED BY SAM'L. SANDS & SON, BALTIMORE, MD.

VOL. III.—No. 7.]

JULY, 1874.

[NEW SERIES.

Manures, Natural and Artificial.

We are indebted to a friend in England, (himself an eminent agricultural chemist, and who, consequently, we take it for granted endorses the importance of the paper sent us,) for a copy of a lecture on manures, by Prof. W. E. Catchside, before the Tunbridge Wells (Eng.) Farmers' Club, together with the discussions by the members of the Club, which lasted through several of its meetings.

We have read with unusual interest both the lecture and the discussions thereon, and but for the great space which would be required for their insertion in our pages, we would publish them entire. The lecturer, after finishing his task, proposed to the members of the Club and the farmers present, that they should ask him such questions as they might deem necessary, the more readily to enable him to explain to them his views upon any of the questions introduced in the lecture, which they might not have fully comprehended—a course worthy of imitation by the learned generally, who being themselves as familiar with the scientific terms as with any primary lesson they have mastered, are too apt to take for granted that their hearers are equally acquainted with the technical language they are accustomed to use. And here we will remark, that this is one of the advantages also of those Farmers' Clubs, where every member in his turn is called upon to give his views and practice

upon the subject under discussion, and when not fully explaining himself to the satisfaction of his listeners, they are expected to ask a further elucidation of his meaning, and thus, on the spot, any misapprehension may be speedily corrected, and the speaker enabled the more readily to explain himself to the satisfaction and enlightenment of all his fellow-members—a matter, in our judgment, of no small importance in such discussions.

Although we cannot give this lecture entire, yet the discussions at one of the meetings alluded to embraced to such an extent the leading points, that we think we can in a reasonable space present the subjects examined in a satisfactory manner to our readers.

The lecturer is vouched for as a practical agriculturist as well as an educated chemist. In addition to his own labors, he had also the advantage of the assistance of his father, an old and intelligent farmer, and thus, in answer to the question whether he "practiced what he preached," was enabled to answer the question very emphatically in the affirmative. He began by saying, that the subject he had chosen for discussion was one of great and vital importance to agriculturists, and indulged the hope that the suggestions made might lead to beneficial results to each member individually—and added that "the cultivation of land, in these times, is a great responsibility on those who undertake the duty, as it seriously affects the prosperity and general welfare of the nation. I feel it a duty resting on

all scientific men, and others who have devoted time and energy to the theoretical study of agriculture, to expound their views and the results of their labors, that the practical agriculturist may sift their teachings, and, if possible, be guided into a path of increased prosperity."

Prof. Catcheside thus lays the foundation of his lecture:

The meaning of the word 'Manure' is explained by various authorities in varied language. Nuttall says it is 'soil to be laid on lands.' Forbes says it is 'anything which fertilizes land.' We all understand it as the latter authority points out. I would call a manure a substance which increases the fertility of land. A manure acts on land much in the same way as a tonic does on a human being. It reinstates strength and vigor in a dilapidated system. And this comparison may be carried a step farther. An overdose, or the presentation of the revigorating agent in too strong a form, will, after producing temporary stimulus, cause subsequent exhaustion and injury. It is well known to all of you that certain plants or crops extract from the soil certain bodies which go to build up the plant. With various crops these extracted constituents vary. It is, then, necessary to manipulate the soil in such a way that it shall be exhausted of its substance by degrees. And when the soil loses a particular body in any quantity, it is always wise to replace this body, in order that a normal state of things may again exist. In fact, it is required to keep land in a condition of perpetual fertility as far as we can. Now, plants are composed of three chief general constituents, namely,—moisture, organic matter, and mineral matter. It is necessary, then, to have a never-failing supply of each in the land. Nature provides, in rain and dews, the supply of moisture. In years of drought, nothing proves so forcibly to the farmer the truth of this statement, and it also shows his entire dependence upon what is termed 'the season.' Without moisture the land cannot produce a crop, simply because a large constituent of the crop is wanting. The action of artificial manures, particularly in dry seasons, will deserve attention by-and-by, as there is much controversy on this point. Some manures, I must say here, contain a large quantity of moisture, and very necessarily too. Ordinary farm-yard dung contains 70 per cent. water. Liquid manures, or the farm-yard drainings, are mostly water, holding certain bodies in solution. Organic matter may be divided into carbonaceous matter and nitrogenous matter. Carbonaceous matter is organic matter which is mainly composed of carbon, whilst nitrogenous matter contains large quantities of a body called nitrogen. In plants, carbon supplies food, which produces fat and heat, whilst nitrogen provides muscle and flesh. Our atmosphere contains a small percentage (.003 per cent.) of carbonic acid gas. This gas is exhaled from animals and human beings, chimneys, decaying matters, &c. &c., and is absorbed by plants. The leaves inhale the carbonic acid, digest it as it were, and keeping the carbon whereverwith to build up their structure, exhale the oxygen gas, which goes to purify the atmosphere in turn, and again becoming inhaled by animal life, is once more re-converted into carbonic acid. The other source of carbon is the carbonaceous matter

in soils. It is therefore needful to keep this fact in remembrance. The nitrogenous matters—principally nitric acid and ammonia—are derived partly from rain and the earth. During thunderstorms especially, owing to the electric action present in the atmosphere, nitric acid is formed, which dissolves in the falling water. Ammonia also exists in rain water to a slight extent. It is to the presence of these nitrogenous bodies that the refreshing property of rain water has been ascribed. In the soil there ought to be nitrogenous matter, and it is generally derived from decaying bodies, roots, sticks, fiber, &c., and is produced as ammonia. The mineral matters are derived solely from the soil. I think it wise to keep a certain check upon the quantities of these constituents in the land. A preponderance of any one of these three constituents ought to be avoided. Hence, if too much moisture be present in soil, it is usual to drain land. If too much organic matter be present, lime is resorted to to break up and decompose the excess of carbonaceous and nitrogenous matter, and render the products soluble and in a condition fit for assimilation by the plant. When a soil is of too mineral a nature, or contains an excess of mineral bodies, it is then necessary to apply some mineral which is rich in organic matter to restore the equilibrium. On the other hand, when we want these bodies, we must call in every means to assist us. The want of water is a want we cannot supply, and a matter which we must leave to the ever-watchful care of Providence. If we require organic matter, we can always provide it, in either form—carbon or nitrogen. And so with mineral matter. I think now, gentlemen, it will strike you that it is highly important that you should know the nature of the soil you deal with. When once known, you can treat it accordingly, recording each year's treatment and carefully noting what substances you supply to the soil, and what bodies your crops deduct. A careful physician, on being called upon to treat a patient, begins by making a careful examination, thorough and searching, minutely noticing every symptom of disease. He thereby unfolds the intricacies of his case, and becomes intimately acquainted with the condition of the system he is about to operate upon. He sees what is wanting and what requires eradicating, and applies his remedies accordingly. Just so a farmer might carefully investigate his land. He would learn the prevailing characteristic of his soil, and could judge what crop it would produce in greatest abundance. We know, from the analysis of different plants, the precise manner in which they are built, or perhaps, to speak more correctly, the precise material of which they are formed. By comparing the constituents of our soil with those in the crop, we can see at a glance whether the land is suited for the crop we wish to grow. If we note any material missing, we can then supply it with absolute certainty.

The lecturer then said that he would divide his subject under two heads, *Natural* and *Artificial Manures*—and would invite the attention of his hearers to the first named class:

This manure (he says) unquestionably holds the first rank amongst all kinds of manure. 'It

is chemically considered,' says Dr. Voelcker, 'a perfect and universal manure. It is a universal manure, because it contains *all* the constituents which our cultivated crops require to come to perfection, and is suited for almost every description of agricultural produce. It is a perfect manure, because experience, as well as chemical analysis, shows that the fertilizing constituents are present in states of combination which appear to be especially favorable to the luxuriant growth of our crops. 'It is impossible,' the learned professor says, 'artificially to produce a concentrated, * universal, and perfect manure, which might entirely supersede home-made dung.' Whatever assistance the farmer may desire from the use of artificial manures, he should rely only on his farm-yard manure for supporting the fertility of his land, because this is the only manure which can return to the land all the materials removed from it by cultivation. I feel it would be only waste of time to impress upon you—practical farmers—the truth of the above facts, so that I will speak of the chemical characteristics of dung now. The two most active and important agents in converting the saturated litter to good dung are decay and fermentation. These two natural processes are analogous to ordinary combustion; the only real differences between them is one of time. In the case of decay, the same result is obtained in a long course of time as is obtained quickly by combustion. The organic matters are resolved into gases, which pass away, and the mineral matter, or ash, remains as the sole remnant of the original matter. The great agent of decay and fermentation, then, as will be readily understood, is heat. A proper proportion of moisture is requisite also for the healthy fermentation of dung. Too little moisture will protract the process, while an excess of water would stop it altogether. During fermentation and decay, dung changes in quantity as well as quality. In quality, as burning fuel does. Various bodies—the products of the decaying process—pass off as gas—e. g., carbonic acid and steam; while nitrogen is liberated in the shape of ammonia. A large proportion of the carbonaceous organic matter goes to form *humus*—the substance spoken of as existing in soil. This substance is always formed when organic bodies suffer decay, and imparts the dark color peculiar to well-rotten dung. The most important result so far, is the formation of ammonia, a most valuable fertilizing agent. Ammonia is an exceedingly volatile gas, being very light; but, although it is often produced in quantity from the dung heap, there is very little loss of this valuable substance, owing to its being absorbed by the body just named—humus. Humus is a kind of acid substance, and acids have the power of absorbing or retaining ammonia. So, that, although ammonia does doubtless escape from the interior and hotter parts of the dung heap, it is immediately absorbed on meeting with the cooler parts in its rise to the surface of the heap. During the fermentation process, other changes occur which are too numerous to mention here. Two changes, however, deserve special attention, viz: the real fertilizing bodies are rendered soluble, and usually run to the bottom of the heap; and the phosphorus and sulphur in the excrete become

oxidized into two soluble acids—sulphuric and phosphoric. When these changes are wrought, it is then time to apply the manure as a fertilizer, as further changes only tend to dilute the strength of the manure. 'We may, to sum up briefly, gather the following facts (Dr. Sibson:) That the loss of weight sustained by farm-yard manure during fermentation is caused by some of its constituents escaping into the air as gases, and by some portions draining away. That these gases are comparatively of little value, and that ammonia is not lost, in any appreciable quantity, as might be supposed.' But as the natural means provided for absorbing the ammonia can only act when the manure remains undisturbed, so that the gas may escape into the cooler and outer layers of the heap, where it is retained, the turning of manure should be as much as possible avoided. Most chemists recommended this rule, on theoretical and, to my mind, well founded grounds. By far the most important point in connection with the dung heap is the liquid drainings. You all understand, I have no doubt, that it is the soluble portions of a manure which are most valuable. They are assimilated by the plant, and easily digested. Now, the drainings from a manure heap contain all the soluble matter, and therefore are the most valuable part of the heap. I would strongly point out to you this important fact. I have often been shocked to see manure heaps on the road side, and in the corners of fields, exposed to rain, and their liquid contents running away in a perfect stream. I would urge the necessity of keeping dung heaps, as far as practicable, under cover, and protected from rain or water. I would not suggest keeping the air away, but merely preservation of those valuable substances which run away to waste through exposure to a solvent agent. An experiment was made in Scotland by Lord Kinnaird to prove the difference of action between covered and uncovered dung, and I will give you the particulars, as I think, in addition to being interesting, they seem to prove the value of my theory of protecting dung from the weather. † 'A field was manured partly with covered and partly with uncovered dung, and the produce of potatoes determined; the whole then sown with wheat, and dressed in Spring with 3 cwt. of Peruvian guano. The results were:—

	Uncovered Dung.	Covered Dung.
Potatoes...	7 tons 12 cwt.	11 tons 15 cwt.
Wheat grain...	42 bushels	54 bushels.
Wheat straw...	156 stones.	215 stones.

The increase of product in the potatoes was nearly sixty per cent., in the wheat grain about thirty per cent., and in straw over thirty-five per cent—all in favor of dung covered from the effects of the rain. Sibson says, ‡ 'That portion lost by drainage is the most valuable portion of the manure, as it consists of ammonia, potash, phosphoric acid, and every other mineral valuable to cultivated plants.' In addition to the chemical effects produced by farm-yard dung, an important mechanical agency is possessed by dung in creating soil and contributing to heavy soils increased looseness and porosity.

In light soils a good application of farm-yard manure actually, in time, adds bulk to the soil, and creates more land; owing to the large amount of humus, and other organic matters,

not taken up by the plant. In stiff lands, dung may be carted on to the land and spread, without any fear of a loss of manuring matter, even though it be not plowed in for some time. Clay has very marked powers of absorption, and as the rain washes the soluble material into the soil, it is held there by the clay, ready for use, when required by the next crop. This property of clay ought to be borne in mind, as it will enable you to clear your farm yards, provided you are going to dung some clay land. The fact is useful, as providing a great convenience in certain circumstances. A closer study of this fact would suggest another idea: That where dung is stored, and must be stored in a situation exposed to rain, proper appliances should exist for the collection of the liquid running away. I would suggest that, in every yard, provision should be made, either by a tank or well, for the salvage of the liquid manure. Further it would, I am sure, repay the outlay to 'spout' all farm buildings. I cannot conceive anything more crude and thoroughly wasteful than the way in which farm yards are arranged. The water from off the shed roofs—where roofs exist—runs into the yards, and, with the additional rain-fall in the open yard, contributes to the large pool and running streams of brown liquid which one meets at the gate. This brown liquid is the vital and essential fertilizing principle of the manure, and is lost to the farmer through neglect of the most ordinary foresight in the construction of the home-buildings.

The lecturer, in connection with what he has thus presented in regard to natural manures, advises as a matter of thrift, what he supposes most farmers do already attend to, the saving and economising the sewage of the house, the ash pit and the privies; the road scrapings, old tufts of grass, scrapings of paths, &c., mixed with lime, if necessary, will be found economical manure, and good top dressing for grass land. Nature provides these sources of fertilizing land for the farmer on his own premises, and they must necessarily require his close care and attention, that he may make the most of them. But seasons come when straw is scarce, when feed is scanty, and poor cattle dear, and the farmer sees that his home produce of manure will be proportionately scanty. It is then that he turns his attention to other sources of manure, for the fertility of his fields must be sustained.

These sources of supply are found in the artificial manures, the remarks upon which will be given in our next.

* Journal of the Royal Agricultural Society, Vol. 17.

† Highland Society's Transactions.

‡ Dr. Sibson's Agricultural Chemistry.

The Charleston Phosphate Beds.

We have had occasion from time to time to allude to the vast beds of Phosphate of Lime, found in the vicinity of Charleston, and which are destined to have an important influence in assisting in the recuperation of the depleted lands, not only of the South, but of the whole world; since already the demand from Europe

is immense. In this one source of wealth alone, there is great hopes for a returning prosperity to the Southern States. We have, in speaking of these phosphates heretofore, warned our readers of the fact, that if applied in its crude state, this substance will be of no value in its application to the soil, as it is insoluble. It must be manufactured by the application of sulphuric acid into a superphosphate, and the more thorough the manipulation the phosphoric acid becomes more soluble, and fit to be taken up by the plants. This is an important point to be attended to, by those who attempt the manufacture. Another consideration is to be kept in view—the quality of the crude article is liable to vary very materially, from the nature of the deposits, and manufacturers who use it always purchase by the ascertained amount of the valuable constituent in a cargo brought from the deposits. The richest specimens are found to contain a greater amount of phosphate than even the fresh bone, although the latter differs from the former in that it is soluble without the addition of the sulphuric acid.

The article below we have been endeavoring to find room for, for some time past. It is from the pen of the editor of the *Mass. Ploughman*, who visited last winter the deposits described by him, and we commend his account of them to the attention of our readers.

CHARLESTON PHOSPHATE BEDS.—There is scarcely any fact more striking than that nature has stored up the materials for the use of an advancing and progressive civilization, in mines and rocks, somewhere in the bowels of the earth, and that we have only to stretch out our hands and take them. The fact that modern science has led to the discovery of immense deposits of fertilizers has never been so clearly recognized as it is at the present time. It is little more than a quarter of a century since the vast deposits of Peruvian guano were brought to light by the investigations of Baron Liebig. Since the year 1840, millions of dollars worth have been used to promote the growth of crops that go to the support of mankind. This valuable substance entered into and affected the commerce of the whole civilized world. It was at first thought to be an inexhaustible source of supply and of wealth. But the drain proved to be too extensive and the deposit gave evidence of soon coming to an end. This prospect had begun to excite some alarm, and the inquiry was frequent as to what we should do when the Chincha Islands should be denuded.

Other islands, to be sure, were sought and found, and they served to keep up the courage of cultivators of the soil for a time with the hope that something would turn up. It is hardly more than ten years since vast deposits of potash salts were discovered in Germany, and the Stassfurth mines began to be worked with great energy. At the present time more potash is furnished from these mines than from the wood

ash sources of supply of the whole world besides. The United States and British America combined, for instance, furnished only about thirteen thousand tons of potash to the commerce of the world in 1870, while the Stassfurth mines furnished in that year over thirty thousand tons of muriate of potash, and the supplies since then have vastly increased, and are supposed to be practically inexhaustible. This was a great and most important discovery, and appears to be growing more and more important every year, as it becomes more and more certain that millions of tons will be supplied every year for a long time to come.

Just at this time, also, there came another equally important discovery, in the immense deposits of phosphates in the interminable swamps along the Ashley, the Cooper, and other rivers of South Carolina. We have not at hand any accurate data to determine the exact extent of these phosphate beds. In fact no sufficiently minute scientific investigations have been made to ascertain their limits, but enough is known to lead to the conclusion that they are practically inexhaustible; that they underlie thousands of acres, that were formerly considered of very little agricultural value.

We had the pleasure of visiting and personally inspecting these phosphate beds two or three weeks ago, and of examining with some care and minuteness the processes of manufacture and manipulation. Taking a small steamer at Charleston, we ran up the Ashley river twenty or thirty miles, passing many large superphosphate factories on the way, and landing first at Drayton, near the celebrated Drayton Hall, a fine old estate dating back to the early English settlement of this part of the country.

At this landing the layer of phosphate rock is plainly visible, lying a few feet below the surface soil and apparently twelve inches in thickness. In many places the layer or stratum is thicker than that. It has been stated that in some places it is ten to twelve feet in thickness, but we saw none so thick, and do not think it will average over a foot, judging from our own observation. In some places, also, it lies quite near the surface, cropping out indeed here and there, and in others it runs so deep as to make it too expensive to dig. That it extends over hundreds of square miles, we have no reason to doubt. This has been asserted by scientific men, and also that from five hundred to a thousand tons underlie each acre. If this is so, how vast must be the supply of an agent of the highest importance to agriculture, and what a source of national wealth it opens to us.

This substance, in its crude state, is perfectly insoluble. If it is ground up and used in this condition it will produce no more effect than so much sand. Its value as a fertilizer, therefore, depends upon the completeness of manipulation or manufacture. If there is a perfect action of the sulphuric acid upon it, the phosphoric acid becomes soluble and fit for the food of plants. Many samples as found in our market are very poorly made, and hence they are of comparatively little value. But when the action of the acid has been complete, the phosphate is just as good as that found in fresher bones. It is identical, in fact, and will produce equally good results. The

imperfect action of phosphates or superphosphates is due, therefore, to the imperfection in the process of manufacture.

We found numerous specimens of shark's teeth and the vertebrae of sharks and other animals among the crude phosphate as it was thrown out. Many of these teeth are very large, and others quite small. On some the enamel is perfectly preserved and the serrations on the edge complete and perfect as upon fresh teeth. On many other specimens the enamel is partly gone and the serrations have disappeared.

Our visit to these vast phosphate beds was one of great pleasure and satisfaction, and we may take occasion to speak of them at greater length hereafter.

Analyses of Crops.

We have received from Messrs. G. & N. Popplein, Jr., of this city, a copy of their "Tables of Analyses of different Grains, &c.," in which they call attention to their new fertilizer in which they claim to supply a long-neglected element not heretofore incorporated in any other fertilizer manufactured, named "Vegetable Silica," which they assert "gives strength to the stalk, so that it will be able to sustain a heavy head of grain and prevent all injury by the fly—besides being so much lighter in weight, the farmer receives nearly twice the bulk in this than he does in any other fertilizer, thereby giving him more facility in distributing it more evenly over the soil."

We are rather doubtful whether the view taken here of this subject is one which chemists generally will sustain. Doubtless silica is necessary for the growth and perfection of many of our cultivated crops, but it will be generally argued that this substance is abundantly present in every soil, and that either the carbonic acid of the air, the potash co-existing in the soil or the ammonia added in the fertilizer of whatever kind, will provide a means of breaking down its combination, and making assimilable these substances by the growing plants. Which mode is the one preferred by nature may be debated, but that it is necessary to add silica artificially will not generally be admitted we believe.

Their fertilizer is styled "Silicated Phosphate of Lime," and according to their analysis of it contains of "Vegetable Silica 50 per cent., Phosphate of Lime 34, and Potash Salts 10 per cent." We give the information contained in their circular, for the consideration of our readers, as bearing upon a somewhat similar subject introduced in the communication of Dr. D. Stewart, on another page—and more particularly to connect with it the analyses of the several grains, &c., which Messrs. Popplein assure us have been attained from the most reliable sources, viz:—

Wheat.—Giving twenty-five bushels as the product of an acre, at 60 lbs. to the bushel, the crop will weigh 1,500 lbs. The straw for this grain will average 3,000 lbs. The wheat and straw contain the following weight of the elements, which is the amount of each taken from each acre of land by such a crop:

	Grain.	Straw.	Total.
Ammonia.....	41-71 lbs.	10-18 lbs.	51-89 lbs.
Phosphoric Acid.....	15-00 "	11-10 "	26-10 "
Sulphuric Acid.....	1-80 "	5-10 "	6-90 "
Lime.....	1-35 "	12-00 "	13-35 "
Magnesia.....	4-65 "	5-10 "	9-75 "
Potash.....	12-00 "	23-70 "	35-70 "
Silica.....	1-05 "	143-10 "	144-15 "

Corn.—Fifty bushels of corn, the estimated crop to the acre, at 58 lbs. to the bushel, weigh 2,900 lbs. This weight of corn will require 3,000 lbs. of stalk and cob (when dry,) and will contain—

	Grain.	Stalk and Cob.	Total.
Ammonia.....	34-22 lbs.	6-00 lbs.	40-22 lbs.
Phosphoric Acid.....	25-81 "	13-50 "	39-31 "
Sulphuric Acid.....	2-90 "	8-40 "	11-30 "
Lime.....	8-7 "	17-70 "	18-57 "
Magnesia.....	7-83 "	9-30 "	17-13 "
Potash.....	13-08 "	59-70 "	72-78 "
Silica.....	7-32 "	81-60 "	83-92 "

Rye.—Thirty bushels of rye, the estimated crop to the acre, at 50 lbs. to the bushel, weighs 1,500 lbs. This crop requires 3,000 lbs. of straw, and will contain—

	Grain.	Straw.	Total.
Ammonia.....	34-22 lbs.	8-70 lbs.	42-73 lbs.
Phosphoric Acid.....	13-65 "	8-10 "	21-75 "
Sulphuric Acid.....	7-60 "	3-00 "	10-60 "
Lime.....	1-05 "	12-30 "	13-35 "
Magnesia.....	2-25 "	4-50 "	6-75 "
Potash.....	8-55 "	24-00 "	32-55 "
Silica.....	7-80 "	90-00 "	97-80 "

Oats.—Fifty bushels of oats, the estimated product of an acre, at 33 lbs. to the bushel, weighs 1,650 lbs. This amount of grain requires about 2,000 lbs. of straw, and they contain—

	Grain.	Straw.	Total.
Ammonia.....	37-45 lbs.	7-80 lbs.	45-25 lbs.
Phosphoric Acid.....	10-39 "	4-00 "	14-59 "
Sulphuric Acid.....	6-62 "	3-20 "	9-82 "
Lime.....	1-81 "	7-40 "	9-21 "
Magnesia.....	3-47 "	3-80 "	7-27 "
Potash.....	7-59 "	6-00 "	13-59 "
Silica.....	2-14 "	45-40 "	47-54 "

Potatoes.—One hundred bushels of potatoes, the estimated product of one acre, at 60 lbs. to the bushel, weigh 6,000 lbs. The tops, when dry, weigh about 3,000 lbs. and together they contain—

	Tubers.	Tops.	Total.
Ammonia.....	21-09 lbs.	1-50 lbs.	22-59 lbs.
Phosphoric Acid.....	23-00 "	18-00 "	51-00 "
Sulphuric Acid.....	12-60 "	15-70 "	28-30 "
Lime.....	4-20 "	15-00 "	19-20 "
Magnesia.....	7-80 "	10-50 "	18-30 "
Potash.....	109-00 "	70-00 "	179-00 "
Silica.....	13-00 "	30-00 "	43-00 "

Clover hay.—Four thousand lbs. of dried clover, the estimated product of one acre, contain—

	Ammonia.....	Lime.....
Ammonia.....	59-00 lbs.	75-07 lbs.
Phosphoric Acid.....	19-76 "	Magnesia.....
Sulphuric Acid.....	7-50 "	Potash.....
Silica.....		80-09 "
		18-65 lbs.

Tobacco.—One thousand pounds of the stems and leaf of tobacco contain—

	Phosphoric Acid.....	8-6
Phosphoric Acid.....		8-6
Sulphuric Acid.....		9-3
Lime.....		38-8
Magnesia.....		25-0
Potash.....		73-7
Silica.....		23-0

Cotton.—One thousand pounds of the fibre, seed, and stalk of cotton, when dry, contain—

	Fiber.	Seed.	Stalk.
Phosphoric Acid.....	8-5	14-8	5-5
Sulphuric Acid.....	5-6	1-6	0-5
Lime.....	25-7	5-4	7-9
Magnesia.....	14-5	5-6	2-2
Potash.....	54-0	14-4	8-8
Silica.....	1-3	3-4	2-3

Agricultural Calendar.

Work for the Month—July.

The work of preparation over, the revolving year brings us now to the season of fruition, and we hope our readers all will be in the enjoyment of bountiful harvests when these pages meet their eyes.

Wheat Harvest.—In most parts of the country whither the *Farmer* goes harvest will be over before this No. arrives. Where this is not the case any words of admonition from us will be too late for much effect in securing timely preparations of tools, hands and supplies.

Cultivation of Corn.—Active work in the fields with the cultivators will soon put the crop where it may be laid by. The drier the season the greater the necessity for frequent stirring of the soil. We have so often borne our testimony against the practice of mutilating the feeding roots of the plants that we deem it unnecessary here to more than incidentally protest against that deep ploughing which tears and breaks off the sources of nutriment and growth furnished by Nature. Frequent shallow cultivation will keep the crop clean, the soil in a condition to absorb from the air its valuable gases, and at the same time in that state also which is best fitted for maintaining in the lower strata the greatest amount of moisture possible in seasons of drouth, no mulching being more serviceable in this respect than finely pulverized earth. A farmer who every ten days breaks up all the roots formed may make a crop, but it will be in spite, and not in consequence of, this system, and it will be due to a season extraordinarily favorable in its character.

Millet and Hungarian.—These may be sown up to the middle of the month. A good deep soil, generously manured, well plowed and finely harrowed, will produce such a crop, with our usual seasons, as will astonish and delight those who have never tried these crops. See suggestions in former Nos.

Fall Potatoes.—Endeavor to keep these clean. There is no crop that suffers more from grass and weeds. Maintain a condition of lightness and cleanness in the soil, and give top dressings of plaster, ashes and salt, mixed, say one bushel of each to the acre.

Fodder Corn.—It is not too late to put in a crop of this any time up to the middle and even the end of this month. As heretofore stated, we greatly prefer sowing it in drills and giving it an occasional working, though sometimes, with a good season, broadcast corn will yield a very large quantity of fodder to the acre. That sown in drills and cultivated will mature sooner, however. Many persons find objection to this crop in the difficulty of saving it, and a great many plans have been suggested. We have tried several methods and have settled upon the one we now pursue as the most convenient and effective. We cut the corn with a scythe between the time when the pollen falls abundantly from the tassels and the forming of

the ears, and as soon as cut place it in *thick* layers against a fence. Here it will dry in three or four days, or it may remain that number of weeks. It is necessary to make the layers thick. This may be conveniently done in some cases by putting the corn up thin and adding other layers afterwards, or a good thickness may be made at once. If set up thin it is liable to mildew, while cured as we propose it is green and sweet, and free from dust.

Buckwheat.—This grain may be sown up to the middle of the month. A good application, and one which will do much towards ensuring a crop, is 200 lbs. of fine bone dust, or that quantity of a good superphosphate. Prepare your land thoroughly, sow from half a bushel to three pecks of seed, harrow it in and roll.

Ruta Bagas may be sown up to the middle of the month. See last month's notes concerning them.

Flat Turnips.—These may be put in from the 25th of this, to the same date in next month. The later sown crops are generally the best keepers, though perhaps not so great in quantity. A good sandy loam is the best soil for these roots, and new ground or a recently inverted sod the condition most favorable for them. A good dressing of superphosphate is a very good application, as also is ashes. The ground should be deeply plowed and thoroughly harrowed. The ordinary mode of sowing is to sow broadcast and harrow or brush in. The sowing should be done as soon after the ground is prepared as possible as the seed germinates and grows more rapidly and thus escapes the fly. This insect sometimes destroys an entire crop and compels re-sowing, but we do not suffer from it in this country as they do in England. A dusting over the plants, as soon as they come up, of ashes, air-slaked lime, or plaster, will often keep the fly down. As soon as the rough leaves put out the plant is safe.

Root Crops.—All these require frequent and deep working. Do not suffer any weeds or grass to appropriate the nourishment which should go to the crop.

Plowing.—The preparation of ground for wheat will consume a good deal of time in this month. Let the work be done well and such a condition of the soil reached that it may do its best for the crops and its owner.

Timothy Meadows.—Where these are to be set in August it is well to be about the work of making ready the land. Two plowings will be found advantageous and the harrowings should be numerous enough to thoroughly fine the soil. A dressing of ashes, salt and bone dust, say twenty bushels of the first, two of the second and two hundred pounds of the last named, will be sufficient in most cases—will make a good application for soils needing some assistance. Of the seed, a peck to a peck and a half is sufficient for an acre; the finer the mechanical condition of the soil the less seed needed.

Live Stock.—Give some extra attention now to all kinds of farm stock. Working animals need to be regularly fed and watered.

Sheep should have tar in their troughs as a protection against fly; by sprinkling salt over it an application to their noses is effected. Hogs should now have some green food, or better be given the run of a clover field.

Fences.—Look to these and have all needful repairs made. Harvest over, a thorough cleaning out of all the corners is in order.

The Vegetable Garden.

Early crops should have their remains cleared off the ground, and succession crops planted. Do not allow the litter to accumulate, but burn all weeds. Crops not matured must be kept clean and the ground perfectly pulverized.

Asparagus beds should be cleared off, forked shallow and a good coating of manure applied. *Celery* may be set out for the main crop. The plan of planting in trenches seems still the favorite one. When planted on the surface the soil should be rich and well worked. *Cabbages* for the principal crop should now be put out. Those already planted should be well worked. *Cauliflowers* the same. *Lettuce* may be planted out. Give it a good rich place and water. *Sweet Potatoes* should be kept free from weeds and the ground stirred as well as possible. *Sweet Corn* may be planted in the first half of the month. *Herbs* now about in their bloom should be cut for drying.

Farmers' Meetings, &c.

Maryland State Agricultural Society.

The regular monthly meeting was held on 4th June. Mr. Davis, President, in the chair.

The President stated that since the last meeting of the Association, the farmers of Montgomery county held a public meeting, at which they passed a series of resolutions approving the district system for county road management, instead of the present county system. The resolutions also endorsed the action of the Maryland Agricultural Society on the same subject.

Mr. Davis called attention to the fact that at the last monthly meeting the subject of taking some steps towards protecting farmers from the large amount of spurious or impure guano forced upon them by the guano dealers had been agitated. He said he thought the only way to obviate this evil was to purchase the guano directly from the importers, and by doing this the farmers would not only get pure guano, but they would get it at the importers' prices. To do this the farmers would have to select some agent and buy their guano directly from him.

Mr. Davis concluded his remarks by hoping that the farmers would not fail to take some action in this matter.

Mr. Sands exhibited specimens of the Colorado potato bug, which have made their appearance in this locality recently. The bug is nearly half an inch long, is rounded in shape, and has ten black lines on its wing covers—five on each. The females of the first comers deposit their eggs on the under sides of the young leaves of the vines in clusters of from ten to twenty. The slugs hatch out in a few days, feed voraciously

from 17 to 20 days. They then bury themselves in the earth, change into pupæ or cocoons, and remain in that state for some ten days, when they come out as beetles, ready to deposit their eggs for another generation. It is therefore necessary, in view of the amazing rapidity of their propagation, that they should be attacked the moment they are discovered to have made their appearance.

[Drawings of the insect and description and remedy, will be found in the *American Farmer* for March.]

The President then introduced Rev. Thos. McCormick, of Baltimore, about 83 years of age, a nephew of Thomas Moore, the inventor of the Refrigerator. Mr. M. submitted an interesting essay, which was read, about Refrigerators and their inventor. Mr. Moore was a civil engineer, and in 1805 he constructed in one year the causeway from Mason's Island to the Va. shore, for which he received \$24,000—and was afterwards employed by the U. S. Government to lay out the great national route to the West; he also held other important positions. The essay says, "Mr. Moore was a remarkable man. His father, Thomas Moore, an Irish Quaker, came to this country early in the last century, settled first in Pennsylvania, where he married, and afterwards removed to Loudon county, Va. About 1794 Thomas Moore removed to Maryland, having married Mary Brooke, daughter of Roger Brooke, of Brooke Grove, in Montgomery county, and soon distinguished himself as a practical farmer. The State of Maryland is greatly indebted to him for many improvements in agriculture. He had the model farm of the county and State, which is now owned by E. J. Hall, president of the Montgomery County Agricultural Society. Persons came from long distances to see the farm and to witness the deep plowing with the mammoth plow of Mr. Moore's own invention. One distinguished visitor was Charles Carroll of Carrollton."

Mr. Davis also introduced William Brown, of Montgomery county, about 79 years old, the inventor and maker of the first premium plow in Maryland, the premium having been taken by him over several competitors fifty-two years ago, at the Maryland Cattle Show, held about four miles from Baltimore, on the Frederick road in 1822. Mr. Brown gave an interesting sketch of his early life and success as a mechanic, and subsequently as a farmer. He said he was worn out by old age, but he was pleased at being present at a meeting of farmers. He said he did not have a dollar in his pocket when he went to the show. He was told by Mr. J. S. Skinner, that he ought to join the society before competing for a prize, and that the admission fee was \$2. Mr. Brown replied he did not have a dollar, and a badge was pinned on him without paying the admission fee, and he was then just as good a member as anybody. [Laughter.] The result of that fair gave Mr. Brown a start in life, and he is now one of the most successful farmers in Montgomery county. Mr. Brown exhibited the silver cup awarded him at the cattle show at which he took the premium, and it attracted much attention. A vote of thanks was tendered Mr. Brown, and both he and Mr. McCormick were elected honorary members of the society.

The subject of utilizing home manures was deferred, Prof. Hutton of the Maryland Agricultural College, who was to read an essay on this subject, not being present.

Upon motion of Mr. Sands, it was decided to dispense with the July and August monthly meetings, and the society adjourned to meet on the first Thursday in September, the hour being changed from 12 M. to 7½ o'clock in the evening.

The Premium List.

A meeting of the executive committee of the Maryland State Agricultural Society, was held 16th ult., to arrange for the State Exhibition to take place 6th October, and to last four days. The premium list agreed upon amounts to about \$10,000. Mr. Richard F. Maynard was appointed Marshal, and Mr. Wm. D. Brackenridge, of Govanstown, Baltimore county, Superintendent of Exhibition Hall. Senator Thurman, of Ohio, is selected as orator on the occasion, but it is not yet known that he will accept the invitation.

The Executive Committee determined to have racing, or, as it is usually termed, trials of speed, during the days of the exhibition, viz: three trotting races on Wednesday, two on Thursday, and a running race on Friday, the latter for a piece of silver valued at \$200; single dash, one mile, horses to be ridden by members of the Maryland Jockey Club, welter weights, post stakes. This race was agreed upon, the *Sun* says, "at the instance of Mr. J. Merryman; there are to be five entries for each of the trotting races, each to pay 10 per cent. of the premiums for the privilege of entering, except for horses that have never beaten 2:35."

During the consideration of the subject of the trial of speed, the President, Mr. Davis, acquiescing in the idea which had been advanced that the races would draw a large number of people to the exhibition, remarked that as it was necessary by this means to get a large attendance, he would waive any objections that he otherwise might have, although he regarded it as illegitimate to appropriate the money of the society to horse racing.

A sweepstake is offered of \$100 for the best home or imported thoroughbred stallion, and a like stake for the best heavy draft stallion; the horses taking these sweepstakes not to compete for the smaller premiums; the sweepstakes offered for stallions last year was struck from the list. For working oxen the premiums were raised from \$50 to \$100, to range as follows: First premium, \$50; second do., \$30; third do., \$20. A premium of \$50 was offered for the best ten acres of corn. There was but little other change made in the premium list as offered last year. All entries of live stock are to be made on or before the 21st of September. Where there is no competition for a premium, ten per cent. of the premium money is to be retained by the association.

Gunpowder (Balto. Co.) Agricultural Club.

The regular monthly meeting of this Club was held on 30th March, at the residence of Mr. A. J. Gent, near Shawan. Mr. J. D. Matthews presided. The usual inspection of the premises,

farming stock, implements, &c., of the host was had—all of which gave evidence of admirable management, thrift and prosperity. Mr. G. showed a lot of corn which had been planted ten days, with which he intended to compete this year for the annual prize of the Club, the terms of which are, that not less than twenty-five barrels to the acre are to be raised to obtain the same. To increase the competition, Mr. J. D. Matthews has offered an additional premium of \$25, to each of the five competitors who reach or exceed thirty barrels. There will be several competitors this season. Mr. Gent is engaged in the milk business, and sends his milk and cream from Cockeysville to Baltimore.

After some other preliminaries, the members of the Club were summoned to another interesting part of these pleasant assemblies, the partaking of an evening repast which the good housewife of the host has prepared for her guests.

This ended, the programme for the evening was continued by the reading of selected articles from agricultural papers. Joshua M. Gorsuch read an interesting article from the *American Farmer* on the subject of "Management of Manure," chiefly devoted to the importance of saving liquid manure, which is almost altogether neglected with American farmers and rigidly regarded by European farmers as the vital point in saving manure. Thomas Gorsuch then read from the same paper a valuable article upon saving manure in the barn yard. An interesting article from the *Country Gentleman*, upon "Lime as a Manure," was read by A. C. Scott. Edwin Scott had selected an article from the same paper upon "The Luxuries and Profits of Farming," which, upon invitation of Mr. Scott, was read by B. McLean Hardesty.

The Club resolved to meet at one o'clock at Joseph Bosley's, on 27th June, to view the fertilizer field, containing eight acres and ten perches of wheat which is divided into eight lots, having as many different kinds of fertilizers applied by way of experiment. D. Gorsuch furnished night manure for one lot; Thos. H. Matthews, Chicago manure; Wm. Whitelock, Vegetator Phosphate; Jos. T. Bosley, Edmonson Phosphate; Maryland Company, fertilizer; Geo. Dugdale, fertilizer; McLean & Love, fertilizer; Peter Zell & Sons, fertilizer.

From there they go to T. T. Gorsuch's for the regular meeting. The subject for discussion is, "Is it profitable to raise sheep in our locality? What are the best breeds? What is the best way to take care of them?"

Union Club of Baltimore County.

The annual meeting of this club was held at their hall near Cockeysville, on the 6th June, for the election of officers and other business. The following gentlemen were chosen for the ensuing year: Samuel M. Rankin, President; J. D. Matthews and N. T. Hutchins, V. P's.; Thos. Gorsuch, Rec. Secy., and Wm. Webster, Cor. Secy.; and Geo. H. Merryman, Treasurer. Executive Committee: Dr. Merryman, James C. Atlee, A. Gent, Genl. Pearce.

Several reports were made by Committees, among them one by Mr. Crowthers, on the subject of the establishment of Granges in the

county. The report says that the general principles of the new Order are similar in the most essential points to those held by the farmers' clubs now in existence, and they deem it unnecessary to recommend any measure upon the subject. It was adopted and the Committee discharged.

The Committee on the subject of a farmers' newspaper and publishing house for the county, reported that they recommend the establishment of the same, and presented a plan for the carrying out the object contemplated, with a capital of \$6,000, in shares of \$5 each. It was stated by one of the advocates of the measure, that the paper was not intended to discuss subjects purely agricultural, but to advocate such measures as were of a local character pertaining to the interests of the tax-paying farmers—and that so far from its interfering with the journal which he considered as among the ablest of the country, (the *American Farmer*, one of whose editors was present,) it would be the means of increasing the interest in it by inducing a greater extent of reading, &c. The Report was adopted, and the same Committee was appointed to carry out the project.

A Committee of 30 was ordered to be appointed by Mr. Gent, who was selected as chairman, to have a general meeting on or about 1st September, similar to that held last year.

The Committee on Fertilizers was directed to confer with manufacturers of fertilizers and implements, to obtain from them the best terms upon which they would sell to members of the Club.

Correspondence.

Extent and Value of the Potato Crop.

By W. H. WHITE, of Massachusetts.

Messrs. Editors *American Farmer*:

General view. The extent of the potato crop of this country, and its importance in an economical, domestic and commercial point of view, commands for it a prominent position among the great staple products of the farmers of all sections of our vast country; forming, as it does, one of the most invaluable articles of food of all classes. From the census returns of 1870, it appears that the potato crop of that year was 143,337,473 bushels—only the great cereals, corn, wheat and oats, exceeding this product in bushels. When we consider that this is less of a commercial crop than the grains, and that it is so largely consumed as an article of food by our own population, we can form some estimate of its importance in domestic economy.

From the census tables we find the decimal returns of the potato crop for the last three decades to be:

For 1850.....	65,797,896 bushels.
1860.....	111,148,867 "
1870.....	143,337,473 "

For the same time we find, from the same source, returns of the sweet potato crop, which is used exclusively for the table and domestic purposes, as follows:

For 1850.....	38,268,148 bushels.
1860.....	42,095,026 "
1870.....	21,709,824 "

From these tables we find a much greater increase of production from 1850 to 1860, than from 1860 to 1870. This may be owing to various causes, disarrangement of labor caused by our unhappy sectional civil war, increased enemies of the Irish potato to contend with, as also the greater tendency of disease to the crop, etc. The falling off we perceive is in the sweet potato crop, which was most universally grown in the Middle and Southern States, while the Irish potato finds a more congenial home in the States with a cooler climate.

When we compare the product of Irish potatoes with that of any of our great cereal crops, we must take into consideration that while the grains may be moved at any and all times, exported largely, fed at a greater profit to farm animals, etc., that the potato is less easily transported long distances, and that each yearly crop must be used up within the succeeding year, cannot be kept, from its perishable nature, only a few months, we can readily understand why the rate of increase is less than that of wheat, corn, etc., so that while treating this particular crop we must consider that it is most largely consumed in the vicinity of its production.

The returns of the Irish potato crop for the several States and Territories for 1850, 1860 and 1870 are indicated in the following table, in which the States are arranged in the order of the alphabet instead of the order of their yield:

STATES.	1850.	1860.	1870.
Alabama.....	246,001	491,646	162,196
Arizona.....			575
Arkansas.....	193,832	418,010	422,196
California.....	9,292	1,789,763	2,049,227
Colorado.....			121,442
Connecticut.....	2,689,735	1,893,148	2,789,894
Dakota.....		9,489	50,177
Delaware.....	240,542	377,331	362,724
District of Columbia.....	28,292	31,693	27,367
Florida.....	7,828	18,706	10,218
Georgia.....	297,373	303,789	197,101
Idaho.....			64,534
Illinois.....	2,514,861	5,540,390	10,944,790
Indiana.....	2,083,337	3,866,647	5,399,044
Iowa.....	276,120	2,806,730	5,914,620
Kansas.....		296,335	2,342,988
Kentucky.....	1,492,487	1,756,531	2,391,062
Louisiana.....	165,632	294,655	67,695
Maine.....	3,436,040	6,374,617	7,771,009
Maryland.....	764,939	1,364,429	1,632,205
Massachusetts.....	3,585,384	3,201,901	3,025,446
Michigan.....	2,359,897	5,261,245	10,387,799
Minnesota.....	31,145	2,565,485	1,943,063
Mississippi.....	261,482	414,320	214,189
Missouri.....	939,006	1,000,850	4,228,361
Montana.....			91,477
Nebraska.....		162,188	738,984
Nevada.....		5,696	129,249
New Hampshire.....	4,304,919	4,137,543	4,515,419
New Jersey.....	3,207,226	4,171,630	4,705,439
New Mexico.....	3	5,223	3,102
New York.....	15,308,398	26,447,384	28,547,593
North Carolina.....	620,318	830,565	738,803
Ohio.....	5,057,769	8,065,101	11,922,814
Oregon.....	91,326	393,319	481,710
Pennsylvania.....	5,186,732	11,667,467	12,880,367
Rhode Island.....	651,620	542,909	639,408
South Carolina.....	136,404	226,735	83,252
Tennessee.....	1,067,844	1,182,005	1,124,337
Texas.....	94,645	174,182	208,383
Utah.....	43,968	141,001	323,645
Vermont.....	4,951,044	5,223,498	5,157,428
Virginia.....	1,316,933	2,292,398	1,293,853
Washington.....		163,594	280,719
West Virginia.....			1,032,507
Wisconsin.....	1,402,077	3,818,909	6,646,129
Wyoming.....			617

The numbers given in the foregoing table, although not absolutely correct, is the nearest approximation which we can make. A careful

examination of this table will show that as new territory is opened and settled by civilized people, that the potato is one of the first crops grown. We also note the steady increased production in all the new States and most of the Northern ones. By carefully examining the numbers affixed to each State any one may draw their own conclusion; therefore little elucidation or explanation is here necessary.

The proportion of Irish potatoes to the whole number of inhabitants, and its near uniformity, at the several decades mentioned, is not a little remarkable. Allowing sixty pounds to the bushel, and our population in round numbers to be 40,000,000, and we have 215 lbs. for each individual; in 1860 the amount to each person was 210 lbs., and in 1850 it amounted to only 164 lbs. to each inhabitant.

When to this we add the various grains, etc., grown for home consumption, we shall see what an aggregate amount there is provided for the average sustenance of each individual of our country—when we consider all this it seems that there is little need for suffering from want of food.

As our statistics fail to give the number of acres devoted to the potato crop or its approximate average yield, I am unable to state them; but of one thing, according to reports published in our agricultural and other papers, we are certain; the acreable product of potatoes has not increased in the proportion to the average increased product to each individual. This is owing to several causes: increased enemies destructive of the crop, deterioration in the healthiness, etc., of the potato, caused largely by injudicious planting, culture, etc.

Our French Letter.

To the Editors of the American Farmer:

The farmer's life and strength are said to be largely based upon hope, and never was that hope more radiant than up to the commencement of this month, when, under the influence of an unusually mild, but precocious temperature, vegetation was full of promise. The white frosts so much to be apprehended have arrived, and committed serious injury among the vines, which form so grand a part of the natural resources of France. The state of the ordinary cultivated crops is on the whole thus far not unfavorable, but they take only secondary rank after the vineyards. So long as he had a prospect of a productive harvest, the agriculturist never complained of his heavy war taxes, and turned an adder's ear to political intrigues. It seems that he will have to mourn over several trials at once. The state of the wheat crop, however, leaves nothing to be desired.

IMPROVING THE HORSES OF FRANCE.

The society for encouraging the breed of horses in France, is going to work in a business-like manner. Not content with a sole annual show at Paris, it has organized regional exhibitions, the first of which has just been held at Nantes, to be followed by another in Bordeaux. France has, in point of climate and richness of soil, very superior advantages for becoming the most important horse-breeding country in Europe, and

that not of one, but of several breeds. Her agriculturists require only to be stimulated, and impressed with sound ideas that horse-rearing is a profitable branch of industry when practiced with judgment. The market is accessible and prices remunerative for good horses. It is not in number—as is the case with sheep, that France experiences a diminution in her stock of horses, but in the quality. There are too many bad mares, too few good stallions. The total number of horses in the country is estimated at three millions, representing one milliard of francs.—Had the progress been sustained in the breeding of horses, as was evident from 1815 to 1866, France, allowing even for the war, ought to have at the present three and a half millions of horses. So detrimental to securing an improved breed of horses, is the bad selection of mothers considered to be, that studs exclusively for approved breeding mares are advocated, as such exist for stallions. Indeed an establishment of the kind desired, exists at Baude, but is worked by private parties, and with profit too. In Finistere, the Norfolk stallions imported, have produced remarkable ameliorations. For Bretagne, however—the province in France, which possesses the greatest taste for horses and the most extensive field for their breeding, the Anglo-Arab stallion is the most suitable; Normandy guarding the natural monopoly of its splendid Percherons. Bretagne seems to forget, that it is oats make the horse, for excepting an occasional feed of barley, horses are universally fed in that province on parsnips and furze. Aware that this diet is not very fortifying, farmers rarely employ the young animals in work, other than to exercise them.

BUTTER MAKING.

Normandy and Bretagne are the two butter-producing regions of France, and their exportations are almost wholly made to England. The former is famed for its Isigny butter, the latter for that called Prevalage, and which is prepared within a circuit of twenty miles around the town of Rennes, though originally taking its name from a small farm. There is nothing peculiar in the race of black cattle of Bretagne; the cows are of a mixed breed and small, but their milk is peculiarly buttery. The forage is nutritive, and plentiful without being abundant; in summer it consists of clover, vetches and aftermath pasture; in autumn the same, with cabbages, a bran mash being given to correct the flavor the cabbage imparts to the milk. In winter, beets, and oat straw, with bran, crushed furze and white carrots. Dairies are commencing only to be known in Britany; the milk is conserved in earthen vessels which are placed in the middle of the kitchen, protected according to the season. The milk when suitably soured, is first skimmed, the cream placed in the churn and as much of the milk added as is deemed desirable. The churn is in earthenware, with the ordinary dash, worked either by a pole as a lever from a beam of the roof, with a stone at the other end, or with the hand directly. In winter a flat bottle of hot water is placed in the churn, in summer a cold one. Twelve quarts of milk yield one pound of butter, the preparation of which has this peculiarity, that in its manipulation no water is used, no washing takes place, which is said to preserve

its delicate, aromatic and "nutty" flavor. But this mechanical kneading is very far from removing the milk and the particles of caseine, and wholesale buyers deduct 10 per cent. from the weight in consequence, having to wash it before exporting it. Isigny butter, which is prepared by washing keeps better, and has a superior flavor to that of Prevalage, after it has been treated with water. In Normandy the barrel churn is universally employed, and the butter is washed in the churn itself. In other parts of Bretagne, the butter, though not washed is salted immediately after being kneaded—never with the hands; from two to four ounces of salt per lb., according to the period of preservation required. After the earthen vessels have been well scalded and cooled, a few spoonfuls of the old and soured milk forming a kind of leaven, are rubbed against the side of the vessel; the fresh milk is poured in, when the "turning" quickly ensues, and the cream is found to rise more rapidly. The butter is made up in one or two pounds, placed in little black earthen pots, covered with linen and corded, and so arrives in the Paris and London markets for immediate consumption. It is also formed into blocks in the shape and as large as a beehive, or packed in shallow wicker baskets a yard long. After the cream has been poured into the churn along with some of the milk, the portion of the milk retained, after being cut in cross blocks by a wooden knife, is with its vessel placed beside a slow fire; in a little time the whey is run off, and to the cooked curd is added the milk fresh from the churn after the butter has been removed; this with rye or buckwheat cakes forms the uniform dietary for the farm servants. It is women who milk the cows; in summer and winter for the first time, at three and five o'clock respectively, the second milking takes place at noon invariably.

GUANO—AGRICULTURAL SCHOOLS.

Too much care cannot be taken to protest against the abuse of the word "guano." It is thus that many may be deceived by the "mineral" guano advertised in Belgium, and the "nut-ton" guano, from La Plata; neither of these has any connection with veritable Peruvian guano, which constantly contains from over 11 to 12½ per cent. of nitrogen, and from 26 to 30 per cent. of phosphoric acid. The La Plata manure is but the conglomerate excretions of sheep, mixed with earth, containing 2½ per cent. azote. A writer has created some amusement by asserting that the introduction of the phyloxera or vine bug, is due to guano. Unfortunately for themselves the vine growers patronize very little guano, preferring poudrette, night-soil, and liquid manure. The alleged origin of the phyloxera are as numerous as their professed cures; one more discovery in either direction will not make much difference. Boussingault has demonstrated that plants cannot absorb nitrogen directly from the air. Hellriegel and de Duhme have corroborated this fact, by growing barley, buckwheat, colza, and peas in calcined sand, and then adding nitrates to one part of this sand. It was clearly shown that without nitrogenous food—for all the plants on the soil deprived of nitrates died after exhausting their store of nitrogen in the seed—vigorous vegetation is impossible, the other plants displayed a luxurious development. Further, the

compound of nitrogen—ammonia, nitric acid, &c.—formed in the air are totally inadequate for the wants of plants.

France is about inaugurating fairs, exclusively for the sale and hire of agricultural implements, and a bill is to be introduced in the Assembly, for the appointment, as in Belgium, of public inspectors of the sanitary condition of live stock.

In Rhenish Bavaria there are a few practices worthy of being recorded, that of receiving pupils at the agricultural schools from the first of November to the 31st of March, when work is slack. The pupils, who must be aged 15 years, board themselves in the village, at approved residences, and the police are specially charged to prevent their entering public houses. Many villages have their Sunday gatherings to discuss agricultural subjects, and competent judges make excursions into neighboring townlands, to report on "defective," as well as superior methods of farming. All takes place in the best spirit, and results in mutual profit.

Paris, May 16, 1874.

F. C.

Home-Made Manure.

Messrs. Editors American Farmer:

I have been a close reader of your valuable paper for the last twelve months. I have read three others and some good books on farming and raising manure, pea fallow and other green crops for manurial purposes. I did not do like the man who bought a cow, and had no pen or house to put her in after purchasing. In the first place I made good hog pens for each lot of hogs and pen them every night; feed them with gleanings of the kitchen and garden, with a little corn to make them come up regularly. I kept the pens well littered with rakings from an old pond which was near by, and kept my cow pens well littered all the time during summer. In the fall had all cleaned out and put in pens packed closely, covered the top with rich earth six inches deep, made the top a little rounded or pointed in the middle to prevent the rain from leaching. I have no lot for my mules or cows, in winter; keep them all in good stalls well littered all the time. I built a large manure house near my barn where I keep all my stock. My manure house is cut up in rooms; as soon as I lay by my crop I take out of my stalls and pack the manure away closely; if dry, I wet with salt water and let it stand till first of January. In addition to making all the manure I could, I hauled from a river three miles away, twenty-nine thousand lbs. of the best settlings I could get from a basin which is often overflowed. I hauled the river mud in summer and put it up in my house to get dry. On first January, taking all the hands I had, I went to work weighing everything on good platform scales: 1,000 lbs. river mud, 320 lbs. green cotton seed, 50 lbs. salt, mixing all well together with pitchforks, put this in my rooms, wetting with water and closely packing away—this amount I put on each acre. My stable manure 600 lbs., 190 lbs. green cotton seed, 50 lbs. salt, mixed well together and packed as above; this amount was applied to each acre, and this manure cost me only \$9.00 per ton. I used a small quantity of Dunham's Guano to test the difference between home-made and commercial manures; the result,

so far, is decidedly in favor of the home-made. The quantity of commercial manure applied in the drill was 200 lbs. per acre, costing \$6.00; home-made costing \$4.50 per acre. I have been farming three years, this is the fourth, and I have used liberally of the commercial fertilizers every year, but my crop is much better this year than any year previous to date. Now, Messrs. Editors, I want you or some of your correspondents give me your views about my plan of making and mixing the quantities; I want light on the subject. My manurial preparation was much larger this year than last. I manure every acre I plant. I will give you the result of my crop when gathered.

Columbia, Ala., June 8th, 1874.

W.

Science as Applied to Agriculture.

The reception of the following communication and the accompanying extract from the *N. Y. Herald*, induced us to turn to the essay on "*Nascent Manures*," referred to by Dr. Stewart—from which we will content ourselves at this time with copying the following paragraphs on the subject of silica in plants:

"It will be readily admitted that silica can never enter the root of a plant, however fine the powder, unless it is in a solution; and that the finest powder of sand or silica, differs as much from nascent silica, as sand differs from sugar.

The importance, then, of soluble silica to grasses and wheat, and especially to corn, and indeed the value of silica as manure, has long been recognized, (see *Liebig's Chemistry*, Am. Ed., 1841, p. 200.)

"It was first supposed that potash was the vehicle for its conveyance to every part of the plant; but the modern idea is, that ammonia is the main instrument of its conveyance; certain it is, that it loses its base at the instant of its deposition on the stem; and if potash were the base, then it would be necessary that the potash be carried back again to the earth, and the plant would be constantly embarrassed by excrementitious matter; whereas, the ammonia being volatile, evaporates, and leaves the glassy coating, or element of strength, on the surface of the stem.

"Thus it is found that more ammonia is actually exhaled from plants than we ever give them in the form of manure; and it is strongly suspected that soluble silica is really the manure, while ammonia is merely the vehicle for the conveyance of soluble silica through the plant."

To the Editors of the *American Farmer*:—If you republish the annexed clipping (from *N. Y. Herald*.) I must beg you to refer to your leader in March, 1855, and remember that you co-operated with the late Evan T. Ellicott and myself in printing and publishing various circulars with reference to the use of the "slag of iron furnaces" as a manure. We powdered the article in large quantities, and after composting it with lime and alkali, distributed it (to a great extent gratuitously) among the leading agriculturists of the day—so also you printed some fifty copies of the above essay gratuitously for the Agricultural

Convention (then assembled at Washington,) and a corrected copy was re-published in the *Manual of Scientific Discovery* for that year.

There is great plausibility in the agricultural interest in "slag," judging from above facts and their resurrection after so many years; if we recognize the existence of phosphoric as well as silicic acid, and also their peculiar condition in all the cinders of iron furnaces and volcanoes.

Yours faithfully, DAVID STEWART, M. D.
Port Penn, Del., June 3d, 1874.

[From the *New York Herald*, 30th May, 1874.]

An Important Application of Agricultural Science.

A new and most important application of a waste product, in the practical processes of agricultural chemistry, has been recently proposed by a foreign engineer. In the manufacturing and coal-consuming districts of Great Britain the enormous profits derivable from the utilization of slag, coal ashes and the refuse of minerals, after passing through the furnace, have been within a few years much discussed. The so-called "volcanic stone," manufactured from slag and hydraulic lime, has been demonstrated to be one of the cheapest and most durable building materials. But now the far more economic and valuable use of the waste matter for enriching the soil has been pressed upon public attention.

The great chemist, Liebig, long ago suggested the important part silicates, in a soluble form, would play in the economy of plants, and silica abounds in all the slag products. Lands otherwise highly improved and fertilized, but lacking the one ingredient of soluble silica, may produce fine crops of wheat, but the straw is found to be too weak to sustain the ears, and whole fields of grain are thus prostrated by the summer storms. The free use of disintegrated slag, which supplies silica to the straw and hardens and strengthens it, enables the golden harvest to resist the tempest. It has been observed that in the midst of fields in which the grain has generally succumbed to the blast, patches in which the ground had been fertilized with the silicious refuse of brick burning, stood erect with their well-filled ears. In the wide wind-swept prairies of the West, whose wheat harvests are the main supply of food for many millions besides the home consumer, the application of this discovery may prove of the greatest benefit and largely add to the total annual yield of the grain-growing States. The process of disintegrating the slag, so as to render it soluble, by running it into water while in a fluid state, appears to be inexpensive. And as the porous soluble fertilizer that results is rich in lime, a double purpose is served, which would justify considerable expenditure in preparing it for the agricultural market. The utility of this important chemical compound will probably be felt in the sugar-cane regions, where silicious fertilizers are in so great demand, and where it is often necessary to burn the standing stripped cane for the sake of restoring vigor to the exhausted soil.

Science has a great work to do in transmuting the waste and refuse materials, elements of pollution, into sources of economy and wealth. The utilization of the sewage of great cities, for agricultural ends, has virtually been a demonstra-

ted success. We doubt not the same success, by patient experiment, is obtainable in the case of many other waste products, which, in ignorance of their value, we suffer to defile our streets, pollute our rivers and taint the air we breathe.

Peas and Buckwheat.

Thanks to the persistence and more to the good example of our venerable correspondent, Mr. Gilmer, there seems to have been a very widely extended and general disposition this season, to try peas and buckwheat. It is to be regretted that the price of peas this year has been exceptionally high, which will probably be found to have limited their use.

The following correspondence will, in this connection, explain itself:

Messrs. Editors American Farmer:

I wrote to Mr. Gilmer in reference to seeding peas in my cornfield, and in a few days after received the June No. of the *Farmer*, and there found my questions answered.

—Since then I have had the enclosed letter from him, which I send to you as he requested.

My peas, seeded last week in May, are looking very well. I feel sure they will increase my wheat crops very much at little cost. The seed cost a little less than \$3 per acre. This week I intend giving them one bushel plaster per acre, and, if possible, a good dressing of shell lime later.

Yours truly, &c.,

J. C. GREENWELL.

St. Mary's Co., Md., June 15, 1874.

To J. C. GREENWELL, Esq.,

Leonardtown, Md.

My Dear Sir:—Your favor of the 2d is to hand, informing me you had fully set out in earnest to fairly test the wonderful effects of the pea fallow, and ask of me a little more information as to the time of ploughing in the pea vines, and as to the probable effect upon the corn crop, and the hogs you designed turning upon the pea crop after taking off the crop of corn. I suppose you will plough them in for wheat. We are strangers and may never meet on earth. I am a feeble old man, born upon the farm, brought up as an apprentice in the craft by my father, who was in his day a good farmer, and have never engaged in any other pursuit than agriculture, at which I have served well. I am an ardent admirer of the farmer's life, and its healthy, pleasant, and profitable results; and as an old man, fast retiring from the field of busy action, permit me now to congratulate you upon your resolve to give the pea fallow an honest, fair trial, and as Mr. Richard Sampson, the first farmer of Va., in his or any other day, often said to a great many: "Do it fairly, and you will never regret nor abandon it;" so say I to you, my young friend, and may you by the pea fallow be placed up as high on the Maryland ladder of agricultural fame as was Mr. Sampson on the Virginia calendar of agricultural fame by the wonderful workings of his pea fallow; and if you should thus succeed, then will I be more than fully repaid for the hurriedly written article

in the March number of the *American Farmer*, which you write has induced you thus to try it. I do not believe your peas seeded at the last working of your corn, will injure the crop of corn; but I should think the time between the removal of the corn and the frost too short to enable your hogs to get much good from the peas, and the pea vines to give their full benefit to the land, and the wheat and the grasses following, must be ploughed in before being injured by the frost. If for wheat, get the vines covered before frost; but if you sow them only for the hogs, I should prefer sowing buckwheat, which I esteem as more preferable for hogs, and equally as good for the wheat crop. A moist season, I greatly prefer the buckwheat; a dry season, the pea is best. Suppose you try a few acres with buckwheat alongside of the peas, and the hogs will show you which they prefer, and the buckwheat is much the cheapest. I shall sow on a lot of five or six acres buckwheat, on which I shall turn my March pigs, out of which I expect my crop of fine pork at a better and cheaper rate than cutting and feeding corn to them. I winter only my sows, which are taken to a select boar so as to pig the first of March. Mine came this year the seventh of March. I have found all stock to do better on buckwheat than on any other grain, and it is the cheapest. A half bushel of seed per acre, with a bushel of plaster and two of salt, and two of oyster-shell lime. Now suppose you try a few acres thus, and I am sure you will be well satisfied with its results over the pea, of which and all of your questions I will more fully write for the July number of our dear old *American Farmer*; which, good as it is universally acknowledged to be, might and would be made vastly more so, if we would write our enquiries upon subjects through that reliable source, and our responses also. We can make ourselves and the *Farmer* vastly more useful if we all would resolve to think more, reflect more, and give the results more freely to each other through that, the best agricultural paper I have ever taken. Do let us all resolve to try it. My friends may be surprised to see all my lands advertised for sale on the 6th of July; it is from no fault of my farming. I have been and am doing well, but have become too feeble for a continuation of such efforts to attend to so much, and only wish to sell some 2,000 or 2,500 acres, and will then have enough to occupy my mind and my strength upon. I love farming and stock, and I love all who are striving to become farmers, who are the main strength of our country. Wishing you great success,

Yours truly,

GEO. C. GILMER.

The Crops in North Carolina.

Messrs. Editors *American Farmer*:

Our crops of cotton, at no time since the war, indeed I don't think I have ever known them at this season, more promising than now. The stand is first rate, the plant of good size and healthy and the crop in good condition.

Our corn crops on high or upland are good, but upon the swamp and pocosin never less promising—destroyed by the bud worm, the spring was unfavorable, too wet and cold.

Most of my corn crop is on pocosin land; have planted three times, finished on the 13th and the bud worm is still killing it.

The average in cotton is, I think, 5 to 10 per cent. less than last year, and the average in corn and oats, fully 20 per cent. greater.

The Winter oats very fine, but the Spring oats poor, not more than $\frac{1}{4}$ of the usual yield will be had.

Yours truly,

J. C. WASHINGTON.

Lenoir Co., N. C., June 16, 1874.

Merino Sheep and what they will do in the South.

Messrs. Editors *American Farmer*:

In the June number of the *American Farmer*, I mentioned some historical facts to show that sheep breeding was one of the leading means of wealth for kings and private citizens from an early period after the creation down through a long series of years. During that time it was evidently for private gain, and not the improvement of their lands.

At an early period fine woolled sheep abounded in Spain. These were there ripened into a breed entirely unlike and distinct from those found elsewhere. There were stationary and migratory flocks. The kings and some of their nobles had their various flocks, and owing to fancy and various circumstances these flocks became quite different; and then, as now, had their advocates. Many of these flocks spent a portion of their time among the craggy peaks and the sterile and bleak Castilian mountains; they often travelled hundreds of miles for their subsistence, and yet, to-day, many Spaniards follow the same for gain.

In Maryland and other Southern States, you have mountains, but not so high or sterile, neither so parched to desolation as those in Spain by the hot winds from Africa, during the heated period. Then their northern acclivities are frequently swept violently by the very cold piercing and terrific gales from the Bay of Biscay.

Their flocks have also been made to pay tribute to the hostile armies contending there, and yet, under all these difficulties, this business is still followed as a means of gain. From their first attracting the attention of the various nations of earth to the present time, there has been little change, and yet how great the change in the United States. Some think they have deteriorated there; never thinking of the great improvement here. There never was a Merino in Spain that would compare with the best now owned in America. Australians owe their wealth and prosperity to the Merino; France, Germany and Hungary have had much wealth from the same source, and Pennsylvania, Ohio, West Virginia, New York and Vermont have all made great gains from the Merino.

The French increased their size; the Germans the fineness of fleece; let us not do as these people have done, improve some point and sacrifice others; let us not remain stationary, but carry the various points along. From these we can make greater advances. Marylanders, your mountains will afford a summer range; your intervals and valleys will furnish meadow and grain. Tend your Merinos and they will clothe

your fields with a rich carpet of green, your waste places can be fertilized and a change will take place. Prejudice will not help you out of this; there stands the Merino and the sooner you take hold the better. First a few and learn your business; do not go headlong into the business; do not in haste purchase a large flock, for many have thus failed. Always feed and tend well; they give you their increase and their products; they learn to depend on you and will well pay you with their grand fleeces; their manure will fertilize your land; your flock and crops will both increase; and a wonderful change will take place, and many shattered fortunes will be made solid. Others sheep, cattle, horses and other stock have their places and their advocates; we shall not contend with them. Our business is to show the way over which we came, and not send the enquirers through the woods. Southern land is much cheaper than here; your winters much shorter and milder than ours, and, as Mr. O. S. Bliss told you, the Merinos will alone make the change; none others will. Allow me to thank him for his suggestions and courtesy. God has given you every advantage over the North, and why not use it? you can grow wool for one-half what we can, and why not do it? why delay and allow others to profit by your standing aloof. To wait until you get ready is not the way; commence even on a small scale and add thereunto.

JOHN S. GOE.

Brownsville, Pa., June 8th, 1874.

A Wheat Fertilizer.

Editors American Farmer:

Sirs—I would like to have through the medium of your valued paper a formula for making a good wheat manure (fertilizer.) Doubtless some of your subscribers have experimented and have hit upon something that has borne the test of experiment, which is just the thing that I want. Would be glad also to be informed where the ingredients can be purchased without any risk as to their purity; in what manner they are compounded and applied to the soil.

The soil upon which I propose to apply them is light (not sandy) and has a clay sub-soil. I suppose you might term the soil a clay loam. Has been limed and produces a luxuriant growth of corn, but have never found it a profitable wheat producer. I propose to experiment with such formula as you can recommend, prepare it in exactly the mode you shall designate, and in like manner apply.

I find that it is not profitable to use very heavy dressings of the commercial manures, from the fact that the prices are too high for the times, and prices of grain being a sure one-sided thing.

I promise you to give you a fair trial upon your conclusions, and when I shall have made the trial to forward you the result, which shall run as far down into minutiae as desirable.

Without further remark, I remain,

Yours very respectfully,

A SUBSCRIBER.

Centreville, Md., June 3d, 1874.

The above is difficult to answer. But shortly after receiving it, we had shown to us the formula annexed, in the hands of Dr. Thompson, as

the one used by his neighbor, Mr. Henry Carroll, of My Lady's Manor. We asked and obtained from him a copy of it, deeming it about as nearly answering the question as we could be likely to get at. Mr. Carroll's wheat crop is, we are informed by him and others, the best evidence of the value of the manure used; which was applied in the proportions named. On our own field we have this season, through our tenant, applied bone-dust and barn-yard manure, which show to our satisfaction that there is no better manure for our soil, which is of a light loamy isinglass character. Further comments hereafter.

Editors American Farmer:

I herewith send you recipe for fertilizer:

Bone Dust, 7 bags.....	167 lbs. each.
Sulphate of Soda.....	3 0 "
Muriate of Potash.....	100 "
Refuse Salt.....	3 bushels.
Nitrate of soda.....	40 lbs.
Ground Plaster.....	2 barrels.

The above, I think, forms one of the best fertilizers that can be used on crops generally, containing as it does nearly all the principles required for plant and cereal foods, and at a cost considerably below the usual price of Super Phosphates.

POTATO BUGS.—In connection with the foregoing I desire to call your attention to the use of *furnace flue dust* as a remedy for the Colorado potato beetle. It has proved a dead shot to that pernicious insect in this neighborhood, and confers an inestimable boon on the lovers of the emperor of vegetables. The discovery of its properties as a destroyer of that insect is due to Mr. Thomas Riley, of Ashland Iron Works, Balto. county, and to him the farmers owe more than a debt of gratitude for the discovery. There is no doubt in my mind, that the dust contains sulphur, and traces of phosphorus and arsenic, upon which depend its valuable properties.

In haste. Yours very truly,

WM. S. THOMPSON, M. D.

Heymouth, Balto. Co., June 22, '74.

GROWING SMILAX.—Jas. Vick, authority as a florist, gives the following directions for the household culture of this plant, now so much desired and used in floral decorations, for twining in the hair, and for trimming party dresses: it can be successfully grown as a house plant. The seeds should be sown in a box or in pots in the house, and should be kept moist until they germinate. The seed being rather slow to vegetate, do not think it bad if it does not make its appearance in two weeks. The young plant should be potted off into two-inch pots as soon as they are three or four inches high. Once a year the bulbs should be allowed to dry off and rest. They will start into growing again in about six weeks. The vine does not require the full sun, but will grow well in a partially shaded situation. It can be trained on a small thread across the window or around pictures. It is a climbing vine, and will attach itself to a string in just about the right condition to use for wreaths, decoration, etc.; or when required for lighter work, the branches which become entwined can be separated.

Live Stock.

A Big Fleece.

We thought on reading the report made to us, and published this month, of the result of Genl. Goe's sheep shearing, that it exceeded anything of the kind we recollect to have heard of, with that breed of sheep, or perhaps of any other—but the June No. of the *National Live Stock Journal*, since come to hand, shows that in wool growing, as in every thing else, the Gold State, California, outstrips all others in the weight of her fleeces. Doubts were expressed of the correctness of the report by a correspondent of the *Journal*, but the editor is furnished with the affidavits in due form, as to the truthfulness of the statement, of which he says "the genuineness of these documents we have neither the right nor inclination to call in question." The *French Merino* ram *Napoleon IV.*, belonging to the late Mr. Robert Blacow, of Centerville, California, is the hero of this wonderful flock, and, according to the report, sheared 51½ lbs. fleece. The widow of Mr. Blacow sends to the *Live Stock Journal*, the following letter, accompanied with the necessary proofs:

"I was not aware that any comments were being made in regard to the weight of the fleece taken from the *French Merino* ram *Napoleon IV.* until a copy of the *Journal* was given me by a friend. I at once took steps to prove that this is not "a California humbug," but a living fact—that the sheep and fleece are now on the farm, and can be seen at any time. I have had charge of Mr. Blacow's sheep for some time, and know what we say about them are facts, as we do business in no other way.

When *Napoleon IV.* was two years old, I clipped from him 46 pounds, one year's growth; at three and four years I was not there, but know the parties well who sheared him. At five years old, I sheared him again. At six years old we intended he should carry his fleece, and be exhibited at the State fair in September; but in this we failed, as his fleece got so heavy that it reduced his weight about 100 pounds; and in July we were compelled to shear him, when his fleece was sixteen months growth, and not twelve, as you have it.

Some of our ewes shear from 25 to 35 pounds; the flock on the average yielding 23 pounds.

If this proof is not considered satisfactory, I hope that some of our Eastern friends who were so badly "choked" with the "big fleece," will satisfy themselves of the thing by coming to our State and inspecting the flock, which numbers nearly six hundred head. They were originally imported from the French imperial flock at Rambouillet.

I enclose affidavits, as requested, and also a few samples of wool.

Mrs. R. BLACOW,
By JAMES ROBERTS.

Centerville, Cal."

We deem it of sufficient importance to publish the following additional evidence, in a letter from Illinois to the *Stock Journal*, also published with the affidavit above alluded to, in the June No. of that paper:

Mr. Bell, of Brighton, does not believe the weight of the California fleece of 51½ pounds. I believe Mr. Blacow does give correct weight of said fleece. The fleece was 16 months growth, instead of 12 months, as Mr. Bell says. I have a letter from Mr. D. J. Porter, Secretary of San Jose District Society, certifying to the truth of all that Mr. Blacow states concerning his sheep. Mr. B. is a man of No. 1. standing, says Mr. Porter. Mr. Blacow says the said ram clipped at two years old 46 pounds—twelve months growth. He also says he has raised a number of ewes that have clipped 35 pounds of twelve months growth. Said ram was not six years old, but three years old, when he clipped the 51½ pound fleece. He is six years old now.

In California, sheep will grow one-third to one-half larger than they will here. A good medium-sized French Merino will weigh there from 200 to 250 lbs. and grow a fleece in proportion. California is a better climate for sheep than we have in Illinois.

He will not think it a humbug when he will have to compete against the 51½ pound sheared at St. Louis this fall, with some 45 pounds of No. 1 wool on its back, and a carcass that will weigh 200 pounds. I have been a fine-wool breeder for some 10 or 12 years, and don't doubt Mr. Blacow's weights, when I can clip 23 pounds from a 75 pound sheep, at 11½ months growth. There is one certain ram in Illinois that will beat the California sheep, if you will take into consideration age of fleece and weight of carcass. Said sheep will not weigh more than 100 pounds in full fleece, and will clip 30 pounds of wool. That will beat the California ram. Mr. J. J. Broward, of Attica, N. Y., has a Spanish Merino ram that clipped, for two years in succession, 35 pounds of wool, which cleaned 9 lbs. 2 oz. Mr. Stickney, of Vermont, once owned a ram that clipped 37, and once 38 pounds, even 12 months growth. Mr. Blacow's entire flock of 300 head makes an average of 28 pounds.

Waynesville, Ills.

WOOL GROWER.

SALE OF HORSES.—The sale of horses by Mr. Lobdell, of Delaware, advertised in our last, took place on 10th June—the prices realized were considered very low. A bay mare, Carrie, 7 years, sire Slasher, was bid in at \$1,200; other horses sold at from \$360 to \$100.

SHEEP KILLED BY DOGS.—On Thursday last twenty-one valuable sheep were found dead in one of the fields on the estate of Judge Critcher, in Westmoreland, having been destroyed by dogs who were killed in the act. Other sheep had been previously killed. Seven other dogs on the estate were shot immediately.—*Fred. St.-r.*

AT A MEETING of the board of managers of the Agricultural and Mechanical Society of Alleghany, Md., and West Virginia and Pennsylvania, it was determined to hold the next fair on the 20th, 21st, 22d and 23d days of October next.

On Growing and Fattening Hogs.

Whatever is worth doing, will generally pay to do well. The hog is universally raised by farmers, but what little care or attention is given to his judicious training for the ultimate end, is obvious to every one who has given the subject a thought. The following excellent remarks from the *Live Stock Journal*, we commend to the attention of our readers:

The hog is accustomed to a great variety of food. He will eat animal and herbaceous food alike—there is nothing that comes amiss to him, and he thrives upon all. To select food for him, then, is not the thing. Though you can fatten him on one kind of food, you cannot do it economically. Take what breed you like, and it is economy in producing the greatest result from a given amount of food—that is the point that gives the profit in hog husbandry. The cheapest food, then, is to be sought, if it answers the purpose. By the cheapest we mean also that which accords with his nature, and which he relishes and thrives upon. Corn alone, though the great hog feed—made a speciality—is not the most advantageous. The exception to this is in the West, where corn is very cheap. But even here, other grain and feed added will produce a better growth of muscle and fat. All animals require a variety of food, and the hog is no exception. His appetite, then, will be satisfied, and all the wants of his system supplied. Grass in summer suits him; he revels in a clover field. Milk suits him all the year round, and assists a rapid growth. Milk contains a great variety of elements in solution, and is an aid to the digestion of the more solid food. He likes vegetables—they stimulate his appetite, not only for the vegetables, but for the more concentrated and richer food. Though a "hog" he is governed by the same physiological principles as other animals, and is, therefore, liable to disease—to many ailments; but most of these are caused by abuses in management. Where he is well attended to, and supplied with a variety of good food, he seldom suffers from disease.

HOW THE PIG SHOULD BE GROWN.

Milk, then, to begin with. Sweet milk first; then sour or skim milk with a little meal, (corn and oats ground,) or some other grain. We have found all of them good, and find the advantage to consist principally in selecting as a main feed the cheapest, whether that be corn, barley, rye, or some other grain. In addition to the milk and meal, a little potatoes or roots of some kind afford an agreeable dessert. Occasionally a handful of hard, dry grain will be relished. This petting exactly suits the hog's nature. Though a "hog" he will thrive best when he is treated delicately, changing his food to suit his appetite. He will now want grass in the season in lieu of roots and potatoes. You cannot give him too great a variety. He is especially fond of lettuce.

In this way he is not "forced" in his growth, but takes it on naturally, healthfully, pleasantly. There will be better pork, also a better hog throughout. He has thus far been growing. His fattening is yet to come, it will be thought.

But this is a mistake. It is the great mistake, or one of them, in the treatment of our hogs. The diet which has been begun and thus far carried out, must be continued. You must grow and fatten your hog as you go along, from his pig-hood up; grow him in all he will healthfully grow, so that when fall comes he will be in condition for the knife—to be put in better condition by increased proportion of grain—corn principally, and old corn at that—in his diet. Do not, however, omit the other aids entirely; it is only the proportion that should be changed. The health, the vigor, the strength, the appetite, will then be continued. You have the sweetest pork throughout, nothing rank, providing always there is a clean pen and a pure atmosphere, a point that is too much overlooked where quality is a consideration. The animal will also breathe better and enjoy himself more in clean quarters, especially when cool and with access to pure water in summer. By nature the hog is not "dirty." He will wallow—so will a fowl—but it is not because he relishes mire; he seeks to be cooled, and water will do it. The fattening, then, is to begin when the growing does—at birth—to be increased as the killing period draws near, but only sufficiently so to reach the desired degree of fatness. This with some breeds, notably the Berkshire, can be done with but little extra feeding. For good, healthy pork, you must avoid over-fattening. An over-fat hog is a suffering hog, remember; and its carcass, which suffers, cannot have the excellence which a healthy hog furnishes. Strain at nothing; use regularity and care in feeding, and there will be no difficulty in securing profit as a fine article for the table.

WEIGHTS OF FLEECES

(All of 1 year's growth and under) shorn on the 26th, 27th, 28th and 29th days of May, 1874, from pure *Merino* Sheep, owned by John S. Gor, $\frac{1}{2}$ miles east of Brownsville, Fayette Co., Pa.

1 ram, 3 years old.....	35 lbs. 1 oz.
1 " 3 " ".....	21 " 6½ "
1 " 3 " ".....	19 " 10 "
1 " 5 " ".....	19 " 0 "
1 ram lamb.....	18 " 11 "
1 " ".....	16 " 11 "
1 " ".....	15 " 13 "

EWES 2 YEARS OLD AND UPWARDS.

22 lbs. 14 ozs.	18 lbs. 15 ozs.	15 lbs. 2½ ozs.
21 " 4 "	18 " 8 "	15 " 5 "
20 " 10 "	18 " 4 "	15 " 14 "
20 " 1 "	18 " 10 "	15 " 10 "
19 " 14 "	18 " 1½ "	15 " 15 "
19 " 5 "	18 " 8 "	15 " 11 "
19 " 4 "	17 " 1 "	14 " 1 "
19 " 1 "	17 " 10 "	14 " 11 "
19 " 0 "	16 " 11 "	14 " 6 "
19 " 2 "	16 " 12 "	14 " 5 "
18 " 13 "	16 " 1½ "	

EWES LAMBS 1 YEAR OLD AND UNDER.

16 lbs. 15 ozs.	15 lbs. 10 ozs.	15 lbs. 0 ozs.
16 " 1 "	15 " 0 "	14 " 1 "
16 " 6 "		

Reference can be made to Capt. Jacob Woolf, Brownsville, Fayette Co., Pa.; Mr. Robert Elliott, Redstone P. O., Fayette Co., Pa.; Mr. John Cook, Tippecanoe, Fayette Co., Pa.; Mr. Emanuel Shearer, Tippecanoe, Fayette Co., Pa.

Respectfully, &c.,

JOHN S. GOR.

GOOD COWS.—A cow, cross between Hereford and Shorthorn, made for quite a number of weeks in succession, between 16 and 17 lbs. of nice butter per week. H. C. Graves also owns the mother of this cow, which he values quite as much or more. Nothing short of \$500 apiece could buy these cows. Who doubts the economy of raising and keeping the best of our stock for dairy as well as for other purposes?—*Boston Cultivator*.

[We can beat the above. Mr. Hy. Carroll, of Baltimore Co., has an Alderney which gives 7 gallons per day of such rich milk, that he believes she makes 18 lbs. of butter a week. Mr. Carroll has commenced Butter Dairying, and has 30 fine cows, and sends to our city about 300 lbs. a week. He intends crossing his stock of Alderney cows by an Ayrshire bull, as more profitable for the business he is now engaged in.]

DEATH OF PERCHERON MOROCH.—Mr. W. T. P. Turpin, President of the *Queen Anne's (Md.) Farmers' Club*, writes that this stallion died on the 31st of May, of congestion of the bowels. He says: "I consider him a great loss to the farming interest of this county, his colts having given general satisfaction, even above expectations. I think, had he lived, he would have paid our club handsomely in a pecuniary point, and very much improved the horses of this section. Even those who were strongly prejudiced against him on account of his size and apparent clumsiness, (if I may use the term,) have had their fears allayed by the activity and general style of his get."

AYRSHIRE VS. JERSEY COWS.—John Glies, of South Woodstock, Ct., writes in regard to Ayrshire and Jersey cows, as follows: "You ask my opinion, which is the best for the dairy, Jerseys or Ayrshires; and as far as my opinion goes, and I have had almost every known breed of bovines, if your object is making butter, the Jersey cow surpasses all other breeds, producing, as they do, full $\frac{1}{4}$ more of the most delicious orange-colored butter, commanding in market from 13 to 15c. a lb. over common butter. If for milk for market, I prefer the Ayrshires, as they give, on the average, nearly double the quantity of milk." This is the usual opinion of these two breeds of cattle.

MR. R. N. RAMSEY, who lives near Pylesville, Harford Co., Md., furnishes, by his success in sheep-raising, one of the most convincing arguments in favor of protecting this important branch of farming. Last fall he purchased 17 ewes and one buck, the produce of which has been as follows: Eleven of the ewes produced 22 lambs, two of them produced 6 lambs, and 5 produced 5 lambs—making in all, 33 lambs as the produce of his flock, besides the shearing, which will add still more to his profit.

HOGS THAT WILL NOT KILL POULTRY.—A South Carolina correspondent says:—"As I have to keep my very small stock of hogs quite near my yard, it is an important matter to me to get a breed that does not eat poultry, and for this

reason I was induced to try the Black Essex, as I knew that the Chester County Whites are very destructive, and I heard that the Berkshire were so also. I am very glad to be able to say that I have not been at all disappointed, for I do not think I have lost a single chick or duckling by them since I have the breed, now about eighteen months."

The Apiary.

BEE STINGS.—If a person is stung while among bees he rarely escapes with one sting. The first sting is but the signal for attack. It does not remain a personal matter between the offending party and any particular bee; the whole community are "eager for the fray." This general attack, if any, is variously accounted for. Some assert that a person who is not scared while among bees is not likely to be stung at all by them; that fright provokes stinging, and that even one sting from some offended bee producing fright, other members of the hive sting because he is frightened. A celebrated bee-keeper, who has closely observed the character of bees, declares that when one of the hive has deposited his sting, the rest, smelling the poison of the sting, go and follow suit, prompted by some mysterious concert of action, without regard to the offence of the party or the frightened state.

WHEN BEE-KEEPING DON'T PAY—WHAT THEN?—Hogs have sold for less than the value of corn fed in fattening. Cattle brought less than cost of raising. Poultry could be had for less than value of food fed them. Yet all required as much care as if sold at a profit. We would, however, think that farmer very unwise who would quit the raising of live stock or grain, because of low prices or severe winters. If bee-keeping farmers would use as much precaution in preparing pasturage and shelter for their bees as they do for their live stock, I doubt not that a few years of experience, backed with a comparative table of facts and figures, would convince them that bee-keeping would prove as remunerative as any business in which they are engaged. The man who expects a large crop of fine fruit each year, without pruning or cultivating his orchard; he who hopes to harvest a heavy crop of wheat, corn or oats, without ploughing or pulverizing the soil; he who expects to cut a heavy swath of hay every year from a meadow which he devotes half the year to pasturage; and the bee-keeper who expects to get a large yield of honey without giving his bees any attention whatever, are all sure to be disappointed with their business, and will declare "it don't pay."—*Bee-Keeper's Magazine*.

BEST TIME TO HANDLE BEES.—Chas. Dadant, in *American Bee Journal*, says:—"Remember that the handling of bees is more easy between ten in the morning and three in the afternoon—in a clear than in a cloudy day—in spring and summer than in fall, and with Italians—pure Italians—than with black, grey or hybrid bees. As to gloves I cannot advise their use, as they are inconvenient. It is better to leave them alone and learn to handle bees."

ALFALFA FOR BEES.—It is claimed by some bee-keepers that alfalfa, or lucerne, furnishes a long continued supply of food for bees. They do not attempt to class it among the best sources of bee food; but they assert that bees can more than live on it, and that, too, in seasons when other supplies fail. If it meet even this requirement it will become still another inducement for favoring this valuable crop. We hope those who have been in the vicinity of alfalfa fields will observe the operations of their stocks, noting also the quality of the honey taken from it, and favor the press with their views upon the subject.

DYSENTERY IN BEES NOT CAUSED BY QUALITY OF HONEY.—Mr. Quinby writes the *American Bee Journal*:—That dysentery is not caused by the quality of the honey is strongly proved by there being none of it when they have been kept sufficiently warm. I know a lot of bees which have been kept in the cellar since the tenth of November, where the mercury has not been below forty-two degrees nor above fifty degrees during the time. Never in better condition—combs bright and clean.

Poultry Yard.

Feeding for Rapid Growth.

A correspondent of the *Prairie Farmer* gives the following hints:

It is the common experience of most successful poultry raisers, that in order to secure a rapid growth in young chicks, they should be fed often—say every two or three hours during the first week or ten days, and at longer intervals as they grow older; care must be taken to give at each feeding only so much as they will eat at the time. As they should not be allowed to run about in the morning in the wet, crying and hunting for something to eat, a handful of cracked corn or other grain should be thrown into each coop at the time of closing up for the night, so that the chicks may help themselves as soon as daylight comes, and while the regular morning meal is being prepared for them. This should be soft mixed. Cornmeal, wheat, shorts and ship-stuff, together and wetted up with milk, is the best available diet we can give here in the West. To this should be added a little salt, an even teaspoonful to each pint of the dry mixed meal—and also a pinch of pepper.

In regard to the use of salt for chickens, some people very much fear to give it, but I am quite positive that it is not only no injury, but really beneficial. If it did nothing more than to give the chicks a relish for their food, and thus cause them to eat the more, this alone would certainly be something gained; for the more food they can be induced to eat, the faster will they grow.

As to feeding pepper, I am equally satisfied that it is a benefit. Much has been written on the subject of gapes, and sundry theories advanced as to the origin and different stages of development through which the gape-worm passes. It may be a matter of interest to scientific searchers after the true history of this pest to know that repeated trials of the feeding to young chicks of common black pepper, as a cure

and preventive of gapes, has, with us, always resulted favorably. The "philosophy of the thing" I cannot explain, but it may be that in the passage of the pepper to the crop of the chick, or while there with the other food undergoing digestion, its nearness to the newly lodged gape-worms at the branching of the trachea may cause the death of the worms.

In addition to the use of salt and pepper, some add also bone dust. This is one of the modern methods, concerning which I have had but little experience, but am inclined to think the use of bone dust is a superfluous expense, on a farm at least where milk can be had in abundance.

Others recommend to mix sulphur with the food, but this is a substance to be used in poultry management with the greatest caution. The purpose of its use in this way is to free the chicks from lice, as the sulphur is said to permeate the whole system and thus destroy the vermin. This may be all true enough, but at the same time it renders the chicks very liable to colds, and its use is almost invariably followed by symptoms of croup.

The Colorado Potato Bug.

In the March No. of the *American Farmer* we took the precaution to warn our readers that there was good reason to apprehend that this dreaded pest would reach the Atlantic coast this season, advising every farmer to be on the alert to attack it as soon as discovered we gave a cut of the insect both in its perfect form and in its grub or larva state. Our monitions proved well founded, and the prediction of some that the insect would not reach the seaboard until 1878 or 1880 were soon disproved, as not only in the vicinity of Baltimore but all over the Western Shore of Maryland, in Delaware and in Virginia, these insects have appeared in great numbers, voraciously attacking the crops.

As the *Farmer* goes into many districts where this enemy has not yet penetrated (and into many, we hope, where it never will penetrate) some further suggestions as to the remedy for it will be timely. The only quick and effectual mode of stopping its ravages is that already pointed out in these pages, namely the use of *Paris Green*. Many other substances have been recommended, and some have been reported to be useful; but where this has been so in one case, in a hundred others they have failed. This is true of air-slaked lime, solutions of saltpetre, red pepper, flue dust of iron furnaces, &c.

The long continuance of this insect at the West, where it seems to be accepted as a steady and constant trouble, has induced investigations of every nature; but there seems to be no other universal remedy when the insect gets a foothold than the one we have named.

Of course the beetles make their appearance first. It is not worth while to repeat a minute description of them, except to say they are about half an inch long, considerably rounded in the body, yellowish with ten black stripes on the wing covers.

The first broods do not seem very greedy and do little mischief, their energy seeming devoted to laying eggs for future crops. These eggs are yellow, and are clustered by tens or twenties on

the under side of the leaves. The worms soon hatch out and then the harvest begins. The worm we may state is disgusting looking, rounded in shape, reddish black in color, lightening as they grow older and larger, and with rows of spots along their sides. If every farmer as soon as the beetles make their appearance would carefully go through the potatoes and hand-pick the bugs and crush the eggs, the first crop of the insects would be much reduced.

After the worms hatch out and begin operations, if in any force, it will be almost impossible to reduce them by hand-picking. Then the Paris green comes in. This is by some applied in solution, or rather mixed with water, but undoubtedly the best plan is to mix with plaster, and use dry, sifting on the vines when the dew is on them, or when they are wet from a rain. One part of the Paris green is sufficient for twenty or even thirty parts of the plaster. The mixture is best applied from a tin box with a perforated top. If so fitted as to have a long handle it will be convenient to use in applying the mixture.

Our own experience with the insect is as follows: When the beetles first appeared, for several days we were enabled to keep them down by hand-picking, and also to crush the eggs, but they soon came in too great numbers to allow of the latter being possible, and the larvæ or worms beginning to appear in considerable numbers, as soon as we believed the first crop was hatched, we applied a mixture of Paris green and plaster, one part to about twenty by weight, dusting it over the vines early in the morning when they were wet with dew. By the next morning almost every worm was dead, and we have seen no others since and only an occasional beetle.

There has been no rain since the poison was applied up to the time of this writing, about ten days, and the plaster can be seen still adhering to the leaves. With late potatoes it is found generally necessary to dust the vines twice.

We refer to what we have heretofore said on the danger of using this mixture, which is virulently poisonous. Keep to the windward of the rows when dusting them with it and do not breathe the flying particles. As a further caution as to the dangers attending its incautious use we annex the following:

DANGERS OF PARIS GREEN.—As this virulent poison is now being in frequent use on the potato and cotton insects, the following precautions in its use, from the *Paint and Oil Journal*, may be found timely:

As the handling and use of dry Paris green, especially by persons unaccustomed to its use, is attended with considerable risk, and often followed by serious consequences, we make the following suggestions founded on our experience as manufacturers:

All packages, whether large or small, should be plainly marked poison.

There is great danger in the mixing of this green for potato bug and cotton worm poison, owing to the fine dust which arises in the process, which is inhaled and also rapidly absorbed by the pores of the skin, especially if the person using it should be in a state of perspiration. To guard against this, the hands and face (particularly

nostrils) should be protected as much as possible, and should be carefully washed after working in it, or in any of the preparations of which it is an ingredient. As it penetrates and poisons wood, gets into the seams and crevasses of articles made of metal, and even into earthenware that is at all porous, all household utensils, or anything in barn or stable which cattle or horses should have access to, in which the article may have been mixed, or from which it has been used, should be carefully set aside, and never again used for any other purpose.

Malignant sores are not infrequently caused by scratching the skin when itching or irritated from handling the green. It should be constantly borne in mind that it is a more dangerous and deadly poison than arsenic, and farmers, planters and others, when purchasing, should be duly cautioned to exercise the utmost care in using it.

As a remedy for the poison, the free use of milk as a beverage is recommended, but we have found hydrated per-oxide of iron (a simple, harmless remedy) the best antidote. Sores caused by the green should be well covered with it, as with an ordinary salve, and a teaspoonful in a wine-glass of water should be taken twice a day internally, while working with the green. This remedy can be obtained from any druggist or chemist.

The consumption of Paris green has largely increased within a few years, and the article is now applied to such a variety of purposes, that carelessness in its use or ignorance of its highly dangerous properties on the part of those who use it, cannot fail to produce the most deplorable results.

ANOTHER REMEDY.—Mrs. Samuel Deforce, of Businessburg, Belmont county, Ohio, writes to the *Scientific American* that her potato vines were very quickly and effectively cleaned of this insect by a couple of guinea fowls, and she thinks that these industrious and persevering bug-pickers might be very advantageously employed wherever potatoes are grown.

TO DESTROY INSECTS.—The *Boston Journal of Chemistry* says that hot alum-water is a recent suggestion as an insecticide. It will destroy red and black ants, cockroaches, spiders, chintz-bugs, and all the crawling pests which infest our houses. Take two pounds of alum and dissolve it in three or four quarts of boiling water; let it stand on the fire until the alum disappears; then apply it with a brush, while nearly boiling hot, to every joint and crevice in your closets, bedsteads, pantry-shelves, and the like. Brush the crevices in the floor of the skirting or mopboards, if you suspect that they harbor vermin. If, in white-washing a ceiling, plenty of alum is added to the lime, it will also serve to keep insects at a distance. Cockroaches will flee the paint which has been washed in cool alum-water. Sugar-barrels and boxes can be freed from ants by drawing a wide chalk-mark just round the edge of the top of them. The mark must be unbroken, or they will creep over it; but a continuous chalk-mark, half an inch in width, will set their depredations at naught. Powdered alum or borax will keep the chintz-bug at a respectable distance.

Horticulture.

Stocks for Fruit Trees—Peaches.

We reproduce with much pleasure the following article from the *American Agriculturist*, written by its editor Prof. Thurber, well known as an eminent botanist and vegetable physiologist. The paper by Col. Wilkins, to which it refers and which appeared in the April No. of the *American Farmer*, has attracted much attention, and the views which the Colonel and Mr. Kerr have taken on this important question seem to be generally sustained by reflecting observers. We hope to hear further from our correspondents on the points involved.

In discussions with fruit-growers as to the want of success with this or that variety of apple, pear or other fruit, we have suggested that an uncongenial stock might have something to do with it, but these gentlemen have not been disposed to adopt this view. In their eyes, one stock is as good as another. Suppose a nurseryman buys a lot of imported or home-raised apple or pear seed; it would be quite within bounds to say that each pound of this contained seeds from a dozen trees of quite different character, not only in the quality of the fruit and its time of ripening, but in the habit of the trees. Some may be regular and others straggling growers, there may be seeds from slow and quick growers, and from those which ripen their fruit in August and those that mature in December. The nurseryman sows his seeds, and if the stocks raised from them are of proper size he buds or grafts them indiscriminately, throwing out, probably, the very unpromising looking ones. To say that a dozen Baldwin apple-trees grafted upon a dozen stocks of widely different character will, when set in the orchard, all produce fruit precisely alike, is to state something that we cannot agree to. In rapidly maturing trees like the peach this matter is more readily tested than with a slow tree like the apple. Entertaining these views, we were much pleased with an article by Col. Edward Wilkins, which appeared in the *American Farmer* (Baltimore,) for April. Col. Wilkins is the largest peach-grower in America, and consequently in the world. Having had the pleasure of visiting his immense orchards at Riverside, Md., a few years ago, we know he brings to fruit-growing all the intelligence and shrewdness that a successful merchant applies to his business; he makes peach-growing a business, and a successful one, and has a sharp eye to everything that detracts from or conduces to that success. Having found that varieties of the peach which should ripen some weeks apart would, much to the detriment of the grower, mature very nearly at the same time, as well as other unfavorable indications in his orchards, he has given much thought to the causes of these abnormal peculiarities. In the well-considered article to which we have referred he attributes these troubles to uncongenial stocks.

To avoid the yellows the nurserymen try to procure for their stock seed from what is called the "native peach," that is a peach which has long been grown in eastern Virginia from the seed; a very poor fruit, but the tree is remark-

ably healthy. Col. Wilkins states that there are as many bushels of seed sold as coming from this native peach as there are bushels of the fruit raised. He claims that stocks raised from this seed, from a very good fruit, grown on a very light soil, are not suitable subjects on which to bud the rich melting varieties, which need good soil and culture to bring them to perfection. Col. Wilkins cannot see (nor can we) why seeds from healthy budded varieties of the peach should not give more congenial stocks than these miserable "native" peaches. This is not merely a notion with Col. Wilkins, but he gives a bit of experience to support his views. The first orchard he ever had was budded upon stocks raised from the seeds of first-class peaches; this was the best orchard he ever had for size, and health of the trees, and the quality of the fruit. In Europe, where there are no "native" Virginia peaches, we hear of no difficulty resulting from the use of the seeds of good fruit for stock whenever the peach stock is used. In Europe, the peach is generally budded upon some varieties of the plum, which are readily multiplied by layers.

The point of Col. Wilkins's article is, that to get peaches true to their kind, they should be budded on stocks obtained from healthy trees of the same variety. To restrict the budding to the same variety seems to us an unnecessary refinement, but we would bud clingstones on clingstones and freestones on free stocks, and late sorts we would not bud upon stocks from early varieties, nor *vice versa*. To the amateur cultivator this matter presents but little importance. He sets trees, and is only too glad if he gets any fruit at all; but to the peach-grower who numbers his trees of each variety by the thousand, the ripening of a sort only three days out of its proper season is a great inconvenience and loss. Another point this gentleman insists upon is that the buds for inserting upon the stocks should be from selected bearing trees. It is the custom in nurseries to take buds from trees that were budded the year before, and the growth of these buds will be taken to furnish buds the next year; and so on, always budding from young stock that has never fruited. We are not prepared to give an opinion upon this point, but it is a legitimate subject of inquiry if constantly budding year after year, from trees that have produced wood and leaves only, may not ultimately have an effect upon the bearing qualities of the trees. We regret that we are unable to give Colonel Wilkins's article entire, but we believe we have presented the main points of it. It is a good sign for our horticultural progress, that one so largely engaged in fruit culture gives his personal experience for the benefit of others.

COTTON.—The Convention of the Cotton interests at Augusta, Georgia, mapped out plans for organizing a National Cotton Exchange, with established rules as to grades, standards and packings. They also made rules for accurate reports from all cotton growing localities, which shall be the reliable authority of the trade. The system of regulations proposed looks towards a thorough government of the whole business, but they cannot be perfected before next year.

Dwarf Pear Trees.

In a discussion on this subject by the Massachusetts Horticultural Society at an early meeting of this year, Mr. Charles M. Hovey excepted to the rooting of dwarfs from the pear, believing it would be better to let them run out their natural lives and then take them up. He thought they would not make as good standards as those originally grafted on pear stocks, on account of their tendency to send out one or two strong roots on one side of the tree, instead of rooting regularly all around the tree. If allowed to root from the pear, they must either be planted at the proper distance for standards at first, or thinned out to such a distance.

Mr. Wood admitted the tendency to which Mr. Hovey objected, but said that it could easily be obviated by the operation of "lipping;" that is, removing the earth and cutting several tongues at intervals around the tree by an upward cut with a gouge or knife, beginning to cut at the bottom of the swelling of the pear where it joins the quince. These cuts should be from an inch to an inch and a half long and a quarter of an inch wide, and kept open by pressing a little earth under the tongue. The earth should be replaced over them, when they will soon send out roots freely all round the tree. The best time to perform the operation is after the middle of June, when the tree is growing rapidly and the ground is warm, so as to excite the production of roots. The soil should be kept moist by mulching or otherwise; in fact, the conditions of success are precisely the same as those required for striking cuttings. Standards made in this way have the advantage over those grafted on seedling pear stocks that they do not send down long tap roots into cold, ungenial soils, to the injury of the tree and fruit.

Marshall P. Wilder had had a great deal of experience with dwarf pear trees during the last forty years, and was strongly in favor of them on account of their early bearing. Two-thirds of his collection were originally on quince roots, and by using this stock he was not only able to test many new varieties in much less time than would have been required with standards, but to furnish himself with fruit in a very few years. Viewed in this light dwarfs were not only exceedingly useful to the amateur and experimenter with new fruits, but a great blessing to the family. He did not concur with Mr. Hovey's view that the dwarf, when rooting from the pear, sends out one-sided roots. Some varieties, such as the Vicar, send out roots freely all round, without the trouble of lipping, and, the quince dying out, they made the very best standards he had got. His system was to plant standards sixteen feet apart, with dwarfs between, and when the standards grew so large as to require all the room, the dwarfs which had rooted from the pear were transplanted to other situations, and were found to be amply supplied with fibrous roots, without any tap root whatever. In this way a large proportion of his trees were made. Where varieties like the Bartlett, Doyenne Boussock, and Belle Lucrative send out roots from one side only, they

still make fine standards when they get well established. In regard to the durability of trees on quince roots, Mr. Wilder said that he had some which, though not rooted from the pear, were more than thirty years old, among which were Urbanistes that each bore regularly more than a barrel a year.

RUTA BAGAS—"ABERDEEN" TURNIPS.—An exceedingly intelligent correspondent of the *South-eastern Planter*, Mr. Joshua Franklin, of Gloucester Co., Va., gives his experience with these roots following Early Rose Potatoes, and his mode of keeping them for sheep so as to save the heavy expense of harvesting:

In June I sold the produce of $\frac{1}{2}$ an acre of the Early Rose potatoes for nearly \$60, the purchaser picking them and paying \$2.50 per barrel. After they had been removed, the piece of land was plowed and harrowed and let stand until near the middle of July, when I had it sown broadcast with 100 bushels of super-phosphate, and then opened in small drills and sown to ruta бага turnips, in a manner similar to mangels, they were over-plowed and thinned, and produced between 300 and 400 bushels of beautiful turnips. [N. B. There is not a particle of wire-grass to be seen where they grew; the dense shade seems to have killed it entirely.]

About May 1st, '73, I plowed and sub-soiled a piece of upland wheat stubble in the manner already described, harrowed and re-plowed twice during the summer; manured in drills as for mangels, everything ready for sowing, so that when the rains began to fall in August I had only to put in the seed. I plowed, hoed, and singled over, and harvested between 2,000 and 2,500 bushels of turnips ("Aberdeen") from 5 acres, which I fed to sheep and fattening cattle during the winter.

I have not sown any mangels nor carrots this year, but expect to sow about 8 or 10 acres of ruta-baga and Aberdeen turnips for sheep, the greater part of which I do not intend to gather, but throw to a furrow out of the alley on the roots from each side, and uncover as needed by the sheep to eat on the ground, thereby saving the most expensive thing connected with this crop—viz: the harvesting.

BY WAY OF ILLUSTRATION!—We had a pleasant surprise a few days after the issue of the June *Farmer* in receiving by express a box of beautiful geraniums all in full bloom, which we found on examining the labels was a collection of those kinds named by our correspondent, Mr. W. F. Massey, in his article in that No. as being particularly fine, besides some which he condemned, as the *Aline Sisley*, and others which have originated with his own firm of Massey & Hudson, at Chestertown, Md. There was also a plant of the *Reticulatum*, but without any of the tracery, and we now expect our friend N. F. F. to add to our collection by sending us in one of the last named with the green and gold tracings. If any body can grow good plants we know N. F. F. can, and he may bring out beauties where others fail.

The Maryland Horticultural Society.

The June meeting was held on the evening of the 16th ult., in Lehmann's Hall, on Howard St. Messrs. John Feast, Sr., Robert J. Halliday, and A. J. Black, florists, and Mr. E. Whitman, amateur, showed some plants, consisting mainly of Fuchsias, Begonias, Geraniums, Caladiums, Dracenas, &c., except those of the first named, who exhibited his usual assortment of rarer plants. Mr. John Cook, Balto. Co., had some very fine specimens of Strawberries, comprising dishes of Boyden's No. 30, Jucunda, Charles Downing, Kentucky, Russel's Prolific and Monarch of the West,—the last named a new and very handsome berry, promising well in Mr. Cook's locality. A basket of berries was also deposited by Mr. Marden, and one of berries and cut flowers by Mr. Rasin.

A lengthy paper was read from Mr. Samuel Martin, of Baltimore, making some suggestions for the organization of the Society, and a letter from Mr. D. Lawrence, of Howard Co., urging the Society not to neglect to encourage the production and improvement of *Vegetables* as an important part of its mission.

The change of the hour of meeting, though perhaps not a very convenient one for country people, could not give much additional trouble to the professionals who contributed, and resulted in drawing together a considerable number of visitors, many of whom were ladies and children. This demonstrated what we have heretofore said, that it only needs a proper effort to set in operation a successful Horticultural Society in this city and state, which would not only do no discredit to our position in Horticultural art, but which would also be liberally supported by our people and make its influence for good felt throughout our whole State.

If an almost improvised exhibition of plants and fruits like this held by this Society, where, of all the professional florists in this city and vicinity, only three exhibited plants, and one fruit, could bring together and keep animated and pleased for two or three hours a whole room-full of intelligent and refined ladies and gentlemen, what might not be expected of a harmonious, well-organized Society, which would include in its working ranks say over thirty commercial florists and private gardeners, of whom each could deposit at every monthly meeting at least a few plants or flowers or a plate of fruit? We hazard nothing in saying that such an association, if it could be arranged as to include and secure the active co-operation of men like Captain Snow, Pentland and Brackenridge, John Feast, Jr., Andrew Cook, Thomas Fairley, Fraser, and Charles Hamilton, and Messrs. McKenzie, Fowler, Flitton, Patterson, Frazier, and a half dozen others we could name, besides those already interested, would make a show which for effectiveness and popularity would certainly not fall behind any of our large cities.

We do not say there could be a Fall or a Spring exhibition which would compare, perhaps, in rare flowers and fine specimen plants, with such old and wealthy societies as those of Bos-

ton and Philadelphia, but we do say an effective, popular and successful show could be made such as Baltimore *never* knew; and by *successful* we mean an exhibition profitable to the Society in a pecuniary point, and, beyond that, encouraging as awaking our people to an appreciation of what is beautiful, refined and artistic, and demonstrating to what extent a well-conducted Horticultural Society will aid in contributing to produce improvements in gardens and homes, in taste and manners, and even in morals.

Professional gardeners might there vie with each other in showing those beautiful specimens of their art and skill known as Florists' plants; but this would not prevent a generous, even lavish display of more familiar but, to the common eye, not less lovely flowers which delight the popular heart, as well as liberal offerings of fruits, and the more unpretending but equally useful vegetables.

This is the way, too, to popularize Horticulture and Horticultural Societies. If a handful of plants shown by a bare half-dozen people can produce the results seen at the June meeting, what might not be expected of a full exhibition, in which a hearty combination of all such men as we have above alluded to should unite to produce the best possible results!

Can anything be done to bring about such a consummation? If there can be, it should be; and a Society having been formed, there is a nucleus to make an efficient organization, such as we long ago pointed out was demanded in Maryland by her situation, her capacity, and the skill within her borders; and such as was easily to be had with a right start made.

THE CURCULIO.—A Mr. Window, of Michigan, has discovered, he thinks, a remedy for this plague, and after six years experience he feels safe in recommending it as effectual. It is to smoke the plum trees with burning coal tar, a process which costs little and was discovered by accident. He takes a frying pan with a long handle, and in it mixes one pound of sulphur and one gallon of coal tar, and as soon as the fruit bursts its petals until it is as large as a small-sized hickory nut, he smokes the trees every alternate morning while the dew is on, often making the foliage black with the smoke. The result convinces him that with reasonable labor, the plum crop is a certainty, his own crop succeeding every year under this treatment, whilst his neighbors fail entirely.

HABITS OF THE CURCULIO.—Professor Riley gives in the *Tribune* the following brief summary of the habits of the curculio, which is worthy of being placed on record: The plum curculio winters as a beetle above ground; hence all theories based upon its wintering in the ground are false. It shelters under the bark of trees, brush, or any other rubbish: hence it is more injurious in timbered than in prairie regions, and hence the burning of rubbish and underbrush around orchards destroys large numbers. It can fly; hence all attempts to stop it from crawling up a tree will not prevent its injury. It is single-brooded, and the beetle is long-lived, the female living sometimes for more than a year, and

ovipositing during a period of several weeks. It is nocturnal rather than diurnal, and though, during the season of egg-depositing, the female may be found at work during the day, especially in cloudy weather, it generally keeps quiet and secluded until evening; hence the most successful jarring may be done very early in the morning or late in the evening. It may be trapped with chips, as described, especially in the early part of spring, when it more invariably seeks shelter near the ground; hence very hot, drouthy weather may destroy it in midsummer, by baking it to death. The grub frequently remains in such fruit as falls, some time after the falling; hence the daily picking up and destruction of such fruit is to be recommended. Cherries and the smaller fruits do not fall when infested with it, as do plums, peaches, etc. During its beetle life, both sexes feed as long as the weather admits of activity; while fruit lasts they gouge holes in it, attacking pip fruit when stone fruit is not to be had. At the proper season, and under favorable conditions, these punctures and gougings are instrumental in spreading rot; hence the insect may sometimes do more indirect than direct harm. Jarring should be repeated every morning or evening, from the time the fruit is the size of a pea until it is ripe.

FARMING IN VIRGINIA.—A Northern gentleman, who four year ago purchased what he calls a one-thousand-two-hundred acre-run-down plantation in the Piedmont region of Virginia, thus speaks of what he is doing in the farming line in a letter to *The Country Gentleman*: "I have to-day in the way of crops one hundred and thirty acres of Fultz wheat, fifty of which, judging from last year's yield, ought to thrash out thirty bushels, and the remaining, twenty bushels per acre; one hundred and thirty acres of clover and timothy on low land; eight thousand grape vines, mostly in bearing. I have yet to put in one hundred acres of corn and twenty acres of tobacco. I have brought up my land chiefly by the free use of bone and plaster," and we can doubtless add a liberal use of brains and muscle.

PLASTER FOR TOBACCO.—A Henderson Co., Ky., farmer finds plaster the best and most economical fertilizer for tobacco. After securing a stand he put about a dessert spoonful on the bud of each plant. Immediately after the first shower it assumed a rich growing color, which it held till maturity, notwithstanding a prolonged drought ensued. Before topping, however, he had as much more applied to each plant—in all about one hundred pounds per acre. The land upon which this experiment was made was high, and exhausted years ago. The crop made was medium in size and uniformly of excellent quality.

LUCERNE.—We staked off a patch of this, measuring less than one-sixth of an acre, and had it cut and fed to one horse and cow, the one cutting supplying the two head for fourteen days. The average height of the lucerne was about thirty inches, and, though we have had no rain since, the height, as we write, is about ten inches. We cut our lucerne last season, which was a dry one, three times,—in this respect not coming near our correspondent, Mr. Coffin, who cut his crop seven times in one year.

Lawn and Flower Garden.

Floriculture, &c.—July, 1874.

By W. D. BRACKENRIDGE, Florist and Nurseryman, Gvansstown, Baltimore county, Md.

Lawn and Pleasure Grounds.

Trees and Shrubs, that have been planted late in spring, are liable to suffer from severe drought; careless preparation of the soil, together with bad planting will greatly augment the loss, if proper attention is not given in time, so as to sustain life, until fresh or new roots have been formed; as a remedy against heavy losses, we strongly recommend giving a good soaking of water, and then mulch the surface of the ground to the depth of two or three inches, and a little wider than to where the roots extend; any kind of soft material that is porous and will afford shade, is suitable—such as tanner's bark, expended hops, short grass from the lawn, or rough stable manure where its presence will not prove objectionable; but the most eligible material for the purpose will be any of the species of Sphagnum, usually found in abundance in our swamps. Where it is not convenient to use a mulch, run over the earth from the neck of the plant with a hoe, giving water enough to penetrate below the extent of the roots, after which level back the earth to where it formerly was; two or three such waterings during a dry spell, will prove quite efficacious. Plants and trees will not suffer half as much during a severe drought, if the surface is kept open by the free use of the rake, hoe and cultivator, and the benefit arising from this will be more evident where the ground has been turned up deep, as the action of the heat on the surface, will draw the moisture below upwards, and permit the gases in the atmosphere to penetrate deeper; we are a firm believer in deep culture, and keeping the upper crust open.

Without delaying longer, it will be necessary to pay attention to certain flowering shrubs, by divesting them with a *knife* of all old worthless wood, and straggling branches now gone out of bloom, so that new wood may be formed during the summer, to produce flowers next year; we allude here to such things as *Spiræas*, *Forsythias* and *Wigelias*, except *W. amabilis* and its varieties, which flower again in the fall; *Deutzias* require but very little pruning at this season. Very graceful shrubs can be formed out of some of those plants we now use as creepers; for instance, take a plant of *Lonicera Douglasii*, having a single stem, top this stem when about 3 to 4 feet high, keep it tied to a stake for at least one year, and as the upper buds will send out straggling shoots, keep pinching these back, until a bushy head is formed, while the main stem will not be long in gaining strength sufficient of itself to support such a head; we pursue the process with the *Glycine sinensis*, *magnifica* and *frutescens*; of such, we can safely say, that nothing is more attractive in the shrub line.

We have growing wild in our Middle States, several flowering shrubs and small trees, which in our estimation do not receive that attention by cultivators which they merit, and in our remarks here, we will dovetail in a few of them; the first which our memory recalls is the Chio-

nanthus or Fringe tree of Virginia, bearing beautiful pendant branches of pure white flowers; and from the same region we have the Halesia or Snow Drop tree, also bearing pure white flowers hanging in little clusters all along the branches like little silver bells; these flower in May and June, and immediately following them in time of flowering are two or three species of Viburnum, with white flowers; these last, as well as the habit of growth resemble very much the Hawthorn, and by many people are so denominated; and one or two of them, like the Hawthorn, make an elegant and substantial hedge. The next that occurs to our mind, is the Clethra alnifolia, a bush about four to six feet high, with leaves resembling an Alder, and bearing in July and August erect spikes of white flowers, fraught with an agreeable odor. These are only a few of the good things which Providence has given us. At some other time we shall enumerate more of them, and however much we may be indebted to China and Japan in the way of shrubs and trees, still we are not blind to the fact that we have their equals growing in our forests, hill sides and meadows.

Hedges should now be trimmed, if this has not been done already. We prefer June for this work, particularly if the hedge is composed of Arbor-Vita, Norway or Hemlock Spruce, and then we go over them again in September. *Pyrus japonica* and the English field Maple, make a very neat hedge to divide a lawn from a vegetable garden; the great beauty of the first consists in its brilliant blaze of scarlet blossoms in spring. The Evergreen Privet and some species of Buckthorn are also well adapted for screen hedges. The majority of hedges are ruined by the way in which they are trimmed; the proper form should be that of the letter A, or two sides of a triangle; this insures the lower branches light and air, causing them to be strong and bushy, and capable of resisting the passage of dogs and other small animals; those table top hedges we so often see, bare at bottom, are only fit for a laundress on which to spread out her clothes to dry.

The propagation of shrubs by layers, should now be set about; if the soil is stiff, prepare a compost of sand and vegetable earth, and after having made an opening in the ground under the shoot you are about to lay, in this place a small quantity of the compost, then with a sharp knife make an incision one to two inches long on the upper side of the shoot towards its point, about half way through it, then with a twist turn the tongue past the stem into the ground, and while doing it raise the point to an almost erect position, making use of a peg or stone to keep it down; a covering of two to three inches of earth is enough; most of such layers will be rooted by the fall, when they can be taken up and wintered in some convenient place.

The keeping of Lawns, as a general thing, is not well understood, and two of the main errors made, are, first in permitting obnoxious weeds to crowd out the grass, while they could easily be got rid of by pinching; but the main error in management exists in not keeping the grass cut short enough, during the early part of the summer, for, if permitted to run up, it becomes bare at the roots—laying them open to the sun's rays;

some people who cut their lawns often permit the short grass to remain as a protection to the roots, but it does not look well, and is apt to clog the machine; we would prefer giving a top dressing of some good fertilizer, early in spring.

Dahlia should receive a mulching of rough stable manure; train them to a single stem, and tie to neat substantial stakes; in dry weather a good soaking occasionally of liquid manure is highly beneficial to their growth.

Where the ribbon system of planting out flowers has been adopted, a considerable amount of attention will be required in keeping each kind within its proper limits; this will in a great measure consist in pinching back some and pegging down others.

The effect produced by the manner you have contrasted the colors, will no doubt be criticised by lookers on, and any remarks made may either confirm you in favor of what you have done, or afford matter for future improvement—for this is an age of progress, and horticulture appears to receive its portion of get along.

Greenhouse.

In this department, at this season, there is not very much to attract our attention, yet it becomes necessary to be watchful in seeing that such plants as have been removed to their summer quarters do not suffer by insects or want of water. Such articles as *Stevias* and *Chrysanthemums* will require to be shifted into larger pots as they progress in size, and both should be frequently pinched back, so as to obtain bushy plants; and give them a situation where they will receive an abundance of light and air.

Climbing plants, as *Stigmaphyllon*, *Manettia*, *Passifloras* and *Allamandas*, will require attention in their training and shifting. To have *Fuchsias* in good condition during the summer, a cool and partially shaded locality will have to be sought out; and there is a class of tuberous rooted plants which prefer a similar situation; we here refer to the various kinds of *Gloxinias*, *Gesnerias*, *Caladiums*, *Achimenes*, *Tideas*, *Mandrolas*, &c., and then we have that popular genus *Begonia*, embracing a great variety of foliage and color of flower; these in combination with the above, and when well grown, will impart to the greenhouse a charm worthy of the highest aspirations of the most sanguine of Flora's votaries.

A Short Chapter on Lantanas.

BY JANE BOSWELL MOORE.

In my window and out-door gardening, until this season, I have had little trouble from those pests, insects, against which floral publications constantly warn us, and for our battle with which furnish us so many recipes and directions. I have neither used powders, oils nor washes, saving pure cold water, which I believe (applied so as to cleanse the whole plant) to be the best preventive of vermin. But this year, being for some weeks very busy, I contented myself with ordinary watering of plants on the plant stand, and paid little attention to them. The weather being warm and the stand exposed to full morning sun, an opportunity was afforded to insects, which they were not slow to avail themselves of. The

state of matters was made known to me by the falling leaves on nine young roses, one of which, a *Gloire de Dijon*, never recovered. Stripped of every leaf, I took each plant to the garden and let the hydrant flow on them, breaking the full force of the jet by my hand. A single application cured them. In a few days they began to put out tiny leaf buds, and some are again in leaf; but care must be taken during the warm weather to wash the plants thoroughly and especially the under sides of the leaves.

The *Lantana* is a favorite flower with me, from the variety and brilliancy of its colors, and its constant bloom. But it has some peculiarities which must not be overlooked, if we want neat plants and steady, profuse flowering. To grow any number of plants successfully, it is desirable to have flower pots of all sizes. Those made by hand at Perine's pottery I prefer, as they are strong, neat and bear rough handling. The two and three-inch sizes are invaluable for newly rooted plants which will not flourish in large pots, the fact being, if you crowd too much food on tender nurslings they will die or pine. By having some of all sizes, you are able to treat different plants and grow *Lantanas*. Mine in a garden bed, became quite rank and woody in rich soil, but had few flowers. This did not suit, for no one would wish to cultivate *Lantanas* for their fragrance. Early one morning I took them all up carefully, the day being cloudy and therefore suitable for transplanting. I put the plants, after a severe pruning and lopping off unsightly branches, (for at the rate they were spreading a few plants would soon have filled a bed,) into these pots, securing good drainage by pieces of old crockery and stones in the base of each pot, filling all with poor, sandy soil. The pots were five and six-inch ones, and were pretty well filled with each root, which I wished in this way to confine. I looked around for my smallest bed, a triangle made in a place where a little piece of ground would otherwise have been lost, and I think not more than three feet on each side, if so much. It was already so full of blazing scarlet geraniums and specialties recommended in Briggs' Catalogue, that I only crowded in it five or six *Lantanas* in pots; these were sunk in the ground, the rims touching each other and covered with earth to hide them. They were well shaded and watered for some days, then uncovered, and when in good condition left to a broiling Virginia sun, which beat on them nearly all day. The plants shared in the daily watering of beds, and bloomed the whole season, having the appearance of one or two plants full of many-colored blossoms. The disagreeable odor I think is confined to the leaves in great measure, and, stripping the flowers of these, they are beautiful in bouquets.

Fragrant Memories of Summer Travel.

BY JANE BOSWELL MOORE.

Now that the heated term is upon us, it becomes a question of importance how to escape the impure atmosphere which surrounds us, and in which many must spend much of the season. It is well to expatiate on the benefits of open space

and the advantage of filling such spots with fragrance and beauty, but if one's prospect is bounded a few feet off by walls of brick, and one's available city garden mostly paved with the same, such a course is impracticable. Years ago, during some months stay in Liverpool, England, I had leisure to note many phases in English life, and no one was more pleasing than the prevailing habit of those who were obliged to spend the summer or at least part of it in the city, of making weekly excursions to Birkenhead and other points of interest. It was refreshing to see crowds returning from the steamers; groups of different families all having a look of real enjoyment. Many years have passed since we spent a summer in the city, but expecting to be in one much of this, we have naturally looked around for all the alleviations possible. We are all interested in the health and morality of the city in which we live, and much can be done to promote them by innocent and healthful recreation, especially needed in Baltimore, where we have in the centre of the city no public park or inclosure which might serve as a breathing place to the tens of thousands whose want of means prevent journeying. Richer classes may wend their way through busy Light street to piers from which pleasant steamers are waiting to bear them to cool summer resorts—Fair Haven with its sea breeze and bathing attractions; Annapolis with its air of quaintness, its State House and the beautiful grounds of the Naval Academy; but the poor sewing woman, whose utmost earnings are but an insufficient pittance, can ill spare even twelve cents fare to and from Druid Hill. Should not such have in their midst, a space, small indeed, but suggestive of fields and woods many will never see?—an artery of life from which health might flow to others as well as themselves, for miasma and disease do not confine themselves to the quarters of the poor. Some such thoughts were suggested by a charming sail on the "Georgiana" to quiet Annapolis, on the deck of which was gathered a band of stalwart musicians, whose stirring notes rang over the waters, sounding a call from heat, dust and tumult, to cool, quiet shores, where pure breezes brought color to the cheeks of eager expectant children and weary wives and mothers. Past Federal Hill, with its steep sides sparsely covered with grass; the huge grain elevator of the Baltimore and Ohio; the low shore, white houses and trees of old Fort McHenry; the Light House at North Point and many busy steamers which pass and repass; the "Georgiana" joyously made her way to the green shores of Annapolis. Words cannot do justice to the quiet beauty, the refreshing green of the grounds through which we walk, stopping now and then to mark some monument to midshipmen lost or killed in far-off seas, with the culture and taste shown in many home gardens. All through the streets the fragrance of perfumed blossoming honeysuckles was felt, lingering with us yet, like our memory of the ancient city—green and fragrant.

FREDERICK COUNTY, MD.—A terrible hail storm passed over the New Market district on Monday evening, 7th. The *Citizen* publishes a list of estimated losses sustained by farmers through the destruction of their crops, which foots up \$30,000.

A Handsome Estate.

Here is a portion of the description by Mr. Meehan, editor of the *Gardener's Monthly*, of the grounds of Mr. H. H. Hunnewell, at Wellesley, Boston, who has, we suppose, one of the most beautiful and skilfully planted places in America :

The entrance is well guarded by a porter's lodge on the right, and on the left by a thick planting of trees, flanked by Rhododendrons and under shrubs. There is literally nothing especial to be seen, and yet the impression it gives, that there is something well worth seeing beyond, is so strong that we regard this as one of the most successful features of the ground. We do not progress far, however, before the belting begins to recede, and the width of the beautifully shorn grass increases,—Rhododendrons and other flowering plants become more abundant, and special features begin to disclose themselves. One of the first of these, if our mind's picture is correct, is a straight avenue of purple-leaved beeches, with a grass walk beneath, having for a terminal object in the long distance what appears to be a splendid well-formed specimen of a white oak. Following the carriage road towards the house, the arrangement of the trees and shrubs is such that the scene seems to shift with every advance. It is in this especially, that the planting of Wellesley is so great a success. As we ride in a railroad train it often seems that we are still and that it is the great world outside which is rapidly passing us. It is so here, however slowly we walk, everything changes remarkably at every step.

Perhaps one of the pleasantest of the surprises we meet in rambling through the grounds we feel as we come on the Italian garden. As a whole the grounds are level; but we find ourselves all of a sudden on a terrace, looking down some fifty feet on a scene in which the hand of art is everywhere apparent. Beyond this stretches a lozenge-shaped sheet of water of several acres in extent, bounded on the west by low tree-covered hills, and having on the north-east side a very large and beautiful building erected by some charitable hand for the higher education of girls. As we saw it from the terrace the sun was setting behind the distant hills, and the dark shade of the bordering woods reflected on the still silvery waters, made a picture of beauty we shall long remember. No former experience of a similar character has left on our mind so deep an impression. The Italian garden at the foot of the lake is, as we have said, wholly artificial. In the level part, near the water's edge, the flower beds are arranged according to various geometrical styles, and in them foliage plants, harmoniously placed according to their colors, were so placed that the contrast one with another was perfect. Silver, gold and purple tints predominated, and even silver sand was called into requisition in order to heighten the effect of some of the plants. Looking down on this picture garden, the scene was exquisitely beautiful, especially in contrast with the undulating black lines of the hills projected on the golden sky by the light of the

setting sun. The garden is reached by nine flights of stairs, carrying us over as many terraces which go around the amphitheatre in which the garden is placed. On these terraces are different plants, all made to have an artificial look.

Sometimes they are white pines, trimmed into dense cones; now they are Irish Yews, in tubs; and again, some trees, which, like weeping beeches, have of themselves an artificial look.

Leaving the garden and wandering along the lake side, we come to a rockery and firm garden, one of the most natural and appropriate transitions from the very artificial garden to the wild woods and waters beyond. In this respect, the taste is perfect enough to satisfy the most critical landscape artist. To form a good rockery is one of the most difficult tasks in gardening. It should look like the work of nature itself, and yet nature rarely if ever gives us a piece of rockery, fresh from her own hands, that any gardener would care to take unadorned, into his own work.

Of this effort of Mr. Hunnewell's, it remains only to say that it is as near reaching the perfect idea as it was possible from the materials at hand.

A very beautiful feature is the English flower garden. This is shut off from the vegetable garden and the rest of the grounds by an Arbor Vitæ hedge, kept in excellent condition, so that the garden with its well-kept grass and tasteful walks, with their well-filled flower beds, have to contain within themselves the capacity to give enjoyment without depending on any aid but the heads of the deciduous trees, which, lowering above the bordering hedge, aid it in the privacy which is so essentially the strong feature of an English garden. In this garden the modern fashion of using Echeverias and other succulents had play, and with good effect. Colored-leaved plants, however, such as Iresine, Alternanthera, and the green but still somewhat artificial Chamepeuces, were used here to advantage in connection with them. As a matter of interest to those fond of good effects from colored foliage we may say that we were never so much impressed with a beautiful contrast as made by *Perilla nankinensis* with the silvery *Centaurea gymnocarpa*, or *C. plumosa*. The variegated leaved *Abutilons* also come into excellent use in these forms of ornamental gardening. Sometimes it is very difficult to make these odd colors come into useful play; and we were never more impressed with the difficulty of making the White Birch look well with the company of any average tree than on this visit to Mr. Hunnewell's. Near rockeries or buildings, it is one of the very best trees to use.

FISH CULTURE IN MARYLAND.—The Md. Academy of Sciences made a visit last month to the Fish farm of Mr. Alex. Kent, which was described at some length in the March No. of the *American Farmer*. Since Mr. Kent's enterprise was first brought to public notice in our pages, his ponds have become quite a place of resort to the interested and the curious. We are glad to learn that several gentlemen in the vicinity of Baltimore have determined to have trout ponds on their farms. Among them, J. Howard McHenry and Thos. Poultney, Esqrs.

Farm Homes.

It has often been remarked that farmers should be men of education and refinement, and certainly there is no reason why they should not be.

There is more purity and beauty, and a wider field for the study of the sciences; the power and goodness of the Creator is here more fully illustrated than in any other business. In time of war, farmers' sons take the lead for chivalry, and their daughters have been celebrated for their beauty, virtue and modesty for a thousand years or more, whilst farmers and farmers' wives are proverbial for their hospitality. Is it possible that such a race of people, blessed with all the comforts of life (if they see proper to make use of them,) could be unhappy, could be dissatisfied, or pine to leave a rural home to embed themselves within the walls of a city home? Yet it seems so, I am sorry to say, and many a farmer thinks he would have a better time in town. Dissatisfaction was one of the curses put upon man in the earlier ages; we don't know when we are happy, when we are well off; we envy these princes of fortune that we see in some of the great cities, without taking hold with our hands and using our brains to amass the means wherewith to follow their example. These men have become princes of fortune by the use of their brains and their hands. To accumulate wealth, we must use our brains and our hands and go ahead with the motto, "all things are possible; I will be an independent man." But this is not all to be done. It will make my home pleasant, and my family happy. Hence it is essential that I become an independent man that I may make my home pleasant and my family happy. For poverty opens the door of pleasure to no man. There must be a starting point to all things; though Adam and Eve were the starting point of the human race, they were also agriculturists; all other branches have been erected to satisfy the wants of their increase, and I acknowledge that it is for our good to have good men in all departments of industry, for they have only been created to meet our wants. We can't get along without good tools, implements, &c., because we must have good machines. To be protected from the weather, we must have good weavers, tailors, carpenters, &c. Let these artisans teach their sons their trades, they will become better perfected under their fathers than will farmers' sons. These men crave to own land; they see the comforts and pleasures of Farm Life, and do settle upon land (or many of them when they accumulate a little money) and there spend their maturing years. But this is getting far away from Adam and Eve.

To go back, when God put Adam in the Garden of Eden, he made him a farmer. His estate encompassed the whole world. Fruits and flowers decorated his dominion, an abundance of fish swam in his waters, beasts browsed over his fields, and the flowers of the land made sweet the air, whilst the birds filled it with melody and song. Adam should have been a happy man, and we have every reason to believe that he was, but his Maker thought that one thing was needful, for he said "it is not good that man should live alone." Consequently we are told

he made a woman, Eve, and gave her to him. The farm home may be beautified as was the Garden of Eden before the admission of woman. But as "it is not good for man to live alone," and the beautifying of a farm home often requiring ages for its completion, I think he had better induce some fair one at the start to assist him in his labors. A good woman is often worth more to a man than all he possesses; her good sense and judgment will often guard him against trouble, and thereby put dollars into his pocket; she softens his temper by her little winning ways, and makes him gentle, affectionate and happy.

Then, farmers! by woman's aid, beautify your landscapes, have your lawns ornamented with shade trees, and your gardens made sweet by flowers. Flowers are emblematical of purity and refinement; what is pleasant to the sight creates pleasant thoughts, pleasant thoughts create happiness, and happiness creates contentment. So the house should be made as pleasant to the sight, inwardly and outwardly, as means will permit. We should endeavor to abolish all causes of irritation. The abolition of slavery was a great injury to this country pecuniarily, at the time; but I must say, though a Southern man in all my feelings and principles, I think it was a god-send to our land, and that it has been the means of saving more white men's souls than negroes. Had the saints come down from heaven and worked negroes, they most assuredly would have learned to swear, or else they would have landed into bankruptcy. As I have said, remove all causes of irritation, endeavour to control your temper, speak pleasantly, act uprightly, endeavour to understand, so we must not only beautify our homes, but make them comfortable; we must speak to all who surround us pleasantly. Kind words fill the heart with affection, but rough ones fill it with sorrow and discontent. Mutual interests should be cultivated in the family as much as possible, for they bind together the members. Books relating to the welfare of all should be read. Botany should be studied during the rambles in the fields; natural history, philosophy, chemistry, also connect the links of farm and house industry. It is pleasant to work among flowers, to know their names, the names of their sections, to be able to classify them, to study their growth, and by patient care to increase their beauty and fragrance. It is pleasant for a farmer to watch the changes which a grain of corn undergoes when planted in the earth; to see the action of the moisture and heat of the soil awake the slumbering germ. It is his delight to cultivate, to feed, and to protect the little plant. There is much reasoning required in studying the philosophy of the growth as well as the chemical changes which it undergoes. So when its grain is matured and ground into flour for the use of man, the chemistry in the art of bread-making is a matter of serious importance. Many women know the fact that when flour is made up for bread that yeast causes the maze to practically undergo fermentation, and thereby renders it light and porous, yet few of them understand the philosophy of the chemical changes undergone during bread-making. All such subjects should be studied; they are matters of great interest

and importance, and are worth more to elevate the minds of men and women than all the novel reading that they can do. The study of human nature, also of great importance, can be done in our daily intercourse with our neighbors, and we can dispense with novels for this study. I hold that books pertaining to our business are of much greater importance to be read by us. A great incentive to industry is reward; hence children after they leave school, if put to work, should be well rewarded for their labor; if so they will take an interest in their work, acquire industrious habits, and be contented to work diligently to reach independence. Thus the homes of farmers made attractive, their sons and their daughters will be made happy, they will not pine to desert their rural homes, but their most intelligent sons will be farmers as were their fathers, and their loveliest daughters will be farmers' wives. E. B. E.

Queen Anne's, Md.

The Dairy.

Home-made Cheese.

Our able correspondent on dairying, Mr. O. S. Bliss, writes as follows on this subject to an Eastern cotemporary:

A farmer who keeps six cows ought never to be without cheese for his table, and unless situated conveniently near a factory where he can have it more cheaply made than at home, it should be made there. Indeed, many farmers who carry their milk to the factory during the season may at its close make their own supply of cheese with profit. A very good article of cheese may be made from only two cows, and families who keep but two or three cows cannot make a more profitable use of milk during the cool weather in the fall than to convert it into cheese. The milk should be set in the common pans in as cool a place as may be at command until there is an accumulation of several days' milk. The object in setting it in a cool room is to prevent the rising of the cream, and to preserve the milk until enough is saved to make it an object to work it up. Before the oldest milk begins to turn the whole lot is skimmed up, and set in a large brass kettle. A clean new wash-tub, which has not been painted on the inside, would be preferable. A few pans of the newest milk are reserved and placed over kettles and pans of hot water on the stove, and, when heated, added to the mass in the kettle till the whole is brought to the uniform temperature of about 85°, or a little below the blood heat. A portion of a well-cured rennet, about the size of three fingers, should be soaked over night in warm water, which is poured into and mixed with the milk. To determine just the amount of rennet to be used is one of the most difficult things in the whole process. The curd should "come" in about forty to forty-five minutes. If it comes too soon the first time, less rennet must be used next time. If it is too long coming more must be used. Where cheese-making is an every-day

business, a different process of preparing the rennet is far preferable; but where the cheese is "run up" only occasionally, there is no other way than to prepare the rennet for the occasion. When, on running a finger or two under a portion of the curd and gently raising it, it readily breaks or splits, it is ready to be cut. This should be done with a long thin wooden knife, cutting the whole curd from top to bottom into squares of about two inches. After it has stood in this condition ten or fifteen minutes the curd may be carefully broken up with the hands, care being taken not to squeeze it. In a short time—say, ten or fifteen minutes—the curd and whey will have become sufficiently separated, so that a portion of the whey may be dipped off and heated in the same manner as the milk was in the beginning. During the process of dipping off the whey, the curd may be gently broken up into lumps about the size of chestnuts. This done the heated whey may be gradually returned to the tub till the mass is of a temperature of 96° to 100°, or at "blood heat." The heat must be raised somewhat slowly, the curds meantime being stirred and broken. The curd may now be left "to cook" for thirty or forty minutes, when it should be again stirred and broken until it has a firm consistency. When on taking a handful of the curds and squeezing them firmly they drop apart on relaxing the hold, they are ready to be removed from the whey. A cloth strainer is then thrown over them and as much of the whey dipped off as is convenient, after which the strainer is spread over a basket or a low-sided box with a bottom of narrow slats, and the curds are put into it to drain. When thoroughly drained and aired they may be salted with four or five ounces of salt to ten pounds of curd. The whole should be thoroughly and intimately mixed and broken up, when it will be ready for the press. Formerly it was supposed to be necessary to press the cheese to get the whey out; such, however, is not the case with well-made cheese. The object in pressing it is chiefly to cause the particles to adhere and make a homogeneous mass. The size and form of the cheeses is a matter of taste. Perhaps as good a size of hoop as any for the small family cheese is ten inches in diameter. The old form of flat cheeses is generally preferred for farm dairies to the high form adopted in factories. They do not need bandaging. They should be turned in the press after three or four hours, after which a few hours', or at most a day's pressure will be sufficient. The style of press to be used for these little cheeses is of no importance whatever—a bit of scantling or a rail may be made to do all the service needed, placing the cheese near one end of the lever, and laying a short stick of timber across the other end.

Tobacco.—An article in our April number on worms may now be referred to with profit, perhaps. Of course making the soil light, eradicating every sign of grass, and carefully working about the young plants, will occupy the attention in the field. The weather has been so dry that extra care will be needed not to disturb the roots of the young plants not thoroughly established.

The American Farmer.

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SAML. SANDS, } Editors and Proprietors.
WM. B. SANDS, }

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JULY 1, 1874.

A SUMMER CAMPAIGN.—We hope our friends and readers will remember that it is always in order to help on the *Farmer*, whether by efforts to enlarge its subscription list or by practical contributions to its columns. With the comparative leisure that this month brings, we should be glad to have reports from all sections, of trials with fertilizers, or varying methods, with wheat, potatoes, &c., as well as brief reports of the condition of the crops, gathered and growing.

COTSWOLD SHEEP.—The flock of Mr. C. J. B. Mitchell, of Queenstown, Md., is well-known to us by personal inspection and from specimens which we have drawn from it to supply our friends, to be of the very highest quality, and his importation last year of a superb ram gives him fresh blood which will still further increase the value of his sheep. Intending purchasers of Cotswolds are directed to his advertisement in our supplement, as well as to that of Mr. W. W. Cobey, of Charles Co., Md., who has for several years been breeding these sheep, and who has gotten together a flock of superior merit, and which he writes us was never in better condition than now.

TALL RYE.—Mr. Joshua Horner, Jr., the well-known manufacturer of fertilizers, has left at the *American Farmer* office a specimen of rye, 7 feet 10 inches high, grown on land to which was applied his "Maryland Super-Phosphate."

POTASH SALTS.—We would like to have from persons who have carefully tested them, reports of the results of the use of the German Potash Salts. Do the effects of their application come up to expectations? If so, how were they applied, and how was the comparison made between land on which they were used and that where they were omitted? Our inquiry has reference to all crops.

The advertisement of a Florist to be found elsewhere in this No. is worthy the attention of any gentleman of means whose taste might dispose him to go into an enterprise such as is there described.

The opportunity offering is one not often to be met, promising from the character of the advertiser and the great extent of his business, to be a very advantageous opening for the profitable employment of capital.

Received.

To E. W. Buxwell, Esq., Corresponding Secretary, we are indebted for a copy of Part I. of the Transactions of the Massachusetts Horticultural Society for 1874, embracing the discussions had at the meetings of this association during the early months of the year.

From C. E. Benton, Esq., Secretary, we have a copy of the ANNUAL REPORT FOR 1873-4 OF THE WESTERN N. Y. BUTTER MAKERS' ASSOCIATION, containing a number of valuable papers on Dairy Management, with discussions thereon.

From Samuel J. Sharpless, Esq., Philadelphia, Catalogue of his Jersey Herd. One of the earliest breeders in this country of these cattle, Mr. Sharpless is considered an authority on all that pertains to them, and his collection, as we know from a personal examination, is justly celebrated for the beauty and excellence of the animals.

LIFE AND TIMES OF HON. ELIJAH STANSBURY, ex-Mayor of Baltimore, an "Old Defender," &c. This work, compiled and edited by Mr. Archibald Hawkins, gives a large amount of information concerning the growth and progress of this city, devoting considerable space to her early history, besides presenting a complete chronicle of local affairs during the administration of her chief magistracy by the subject of these memoirs—who is still living in the enjoyment of a ripe old age, and of whom a spirited portrait is given in this volume.

ORCHARD GRASS.—Mr. Coffin, of Muirkirk, tells us that last month he cut from three acres of this grass, sown with oats in spring of 1873, eight tons of hay—lacking only 170 lbs.

THE CROPS.—The *grain* and *grass* crops, are very generally reported as good, and with the exception of the Peach crop, the *fruit* crop will also be a fair one. Although the Potato beetle will injure that crop somewhat, yet the general appearance of the early crops at this writing is favorable—next year the beetle will probably be more destructive than this. The fruit-growers of the Eastern Shore and Delaware held their annual session at Dover, Del., on the 16th ult. The attendance was not large, many members from the lower sections of the State, whose expected crops had proved total failures not deeming it worth while to be present—the majority of those in attendance were from New Castle and the northern portion of Kent counties, where the crop prospects are reported as excellent. The estimates were, for 60,000 baskets from all the stations usually shipping, but some present considered this too low, and believed it would reach one million baskets.

The *Corn* crop is very backward, but so far looks healthy, and a good rain or two will soon push it ahead satisfactorily.

The Tobacco crop in all the States growing it is decidedly unfavorable, and it is believed that under no circumstances can half a crop be made, occasioned by the scarcity of plants. The Lynchburg (Va.) *Republican* has reports from all warehouses of that city, and they concur in representing a considerable rise in the price of tobacco. The *Republican* adds, "the disheartening news from Virginia, Kentucky, and elsewhere, in regard to the prospects for the next crop, must have the effect to cause a further rise in the present stock on hand."

The Clarksville (Tenn.) *Tobacco Leaf* says: "Under the most favorable circumstances, the average planting cannot amount to more than a half crop, and should we fail to have plenty of rain within the next ten days, there will not be over one-fourth of a crop planted. News from all portions of Kentucky, Tennessee and Ohio indicate that not exceeding one-fourth to one-half a crop of tobacco will be planted this year under the most favorable circumstances. It is now the 3d of June, very dry, and scarcely any tobacco planted, and plants remarkably scarce; in fact, we don't remember that there ever was such a failure in plants."

The Danville (Va.) *Register* says: "The spring has been a very hard one, and the plants being small were at the mercy of the flies. We are told that many beds are entirely destroyed, and that few farmers will be able to plant out all the ground which they had set apart for tobacco. If these failures were partial, or exceptional, then neighbors could help each other as they usually do, in such straits; but that good custom cannot be carried out this year. As a consequence of this failure of plants, many persons are putting portions of their tobacco ground in corn—which is the best they can do. Good tobacco land will bring corn, if the crop is not cut off by drought, and there is nothing more comforting on one's premises than a full crib."

We could multiply similar complaints to the above, but the above must suffice. The reports we have are from the Va. counties of Appomattox, Amherst, Albemarle, Bedford, Charlotte, Halifax, Louisa, Nottoway, and Pittsylvania, all

of the same tenor, destruction by the fly, and scarcity of plants. The Milton (N. C.) *Chronicle* says: "All through this section the prospect for even a half crop of tobacco the present season is very gloomy. The failure of plants has been general, and what little has been planted the black bug is destroying. This is not written for effect—'tis the naked truth."

THE COTTON CROP.—The statistician of the Department of Agriculture, in the Report for June, states that the season has been remarkable for heavy rains; in the cotton States, in some sections, the aggregate rain fall reported exceeds sixteen inches; the water courses overflowed their banks, destroyed the plants, and prevented germination. On newly planted lands in the more southern belt replanting was general, both in bottom and uplands. From the first week to its close the drought was almost universal. The soil was packed and afterwards baked by the hot sun, retarding cultivation and preventing growth. The stand is, therefore, very poor, many plants not having made their appearance on the first of June. Since the last of May light showers have been general, and the prospects are much improved. The fields are much cleaner than at this date last year, and can easily be kept from weeds. With favorable weather rapid improvement is certain, and a fair comparison with July quite probable at the next report. The aggregate reduction of acreage slightly exceeds 10 per cent. compared with 1873. The condition of the crop at present is represented by the following figures, 100 being a normal or fair condition: North Carolina, 89; South Carolina, 81; Georgia, 80; Florida, 90; Alabama, 82; Mississippi, 78; Louisiana, 70; Texas, 90; Arkansas 90; Tennessee, 85.

THE NEW YORK Tribune says:—A letter was recently addressed to Mr. Gladstone by the secretary of the Central Chambers of Agriculture, calling his attention to the imminent risk to which the United Kingdom is exposed, and suggesting that the importation of potatoes from America be at once prohibited, lest that "frightful enemy, the Colorado beetle," be introduced into the potato fields of Europe. The Privy Council for Trade declined to adopt such heroic measures on the ground that "it does not appear that the eggs or larvæ of the Colorado beetle have been or are deposited or conveyed in the tuber of the potato." We present herewith a timely and authoritative statement bearing upon this interesting question. Prof. Riley, our accomplished entomologist clearly shows that if the *Doryphora* goes abroad it will be a full-grown and healthy specimen, taking a first-class passage. We trust, however, that our foreign friends will not have this scourge added to that which already devastates their potato fields to such an uncomfortable extent.

THE SHORT-HORN HERD BOOK, by Mr. Allen, has just been issued from the press and is said to be more perfect than any of its predecessors.

Another volume of **THE DEVON HERD BOOK** will be issued by Mr. H. M. Sessions, of Wilbraham, Mass., next year; he is now receiving pedigrees for it.

FARM BARN.

Inquiries having been made of us concerning farm buildings, we give in this number a drawing and plan, from *Allen's Rural Architecture*, of a well-arranged plan, with a full description. This we may hereafter follow with some others:

"This is a design of a barn partially on the Pennsylvania plan, with underground stables, and a stone-walled basement on three sides, with a line of posts standing open on the yard front, and a wall, pierced by doors and windows, retreating 12 feet under the building, giving, in front, a shelter for stock. Two sheds, by way of wings, are run out to any desired length, on each

side. The body of this barn, which is built of wood, above the basement, is 60x46 feet; the posts 18 feet high, above the sills; the roof is elevated at an angle of 40° from a horizontal line, and the gables hooded, or truncated, 14 feet wide at the verge, so as to cover the large doors at the ends. The main roof spreads 3 to 4 feet over the body of the barn, and runs from the side eaves in a *straight* line, different from what is shown in the engraving, which appears of a gambrel or hipped fashion. The sides are covered with boards laid vertically, and battened with narrow strips, 3 inches wide. The large doors in the ends are 14 feet wide, and 14 feet high. A slatted blind window is in each gable, for ventilation, and a door, 9x6 feet, on the yard side.



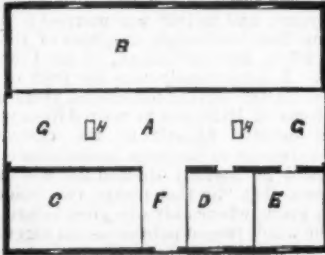
INTERIOR ARRANGEMENT.

A main floor, *A*, 12 feet wide, runs the whole length through the centre of the barn. *S, S*, are the large doors. *H, H*, are trap doors, to let hay or straw down to the alleys of the stables beneath. *B*, is the principal bay for hay storage, 16 feet wide, and runs up to the roof. *C*, is the bay, 26x16 feet, for the grain mow, if required for that purpose. *D*, is a granary, 13x16 feet and 8 feet high. *E*, a storage room for fanning mill, cutting box, or other machinery or implements, of same size and height as the granary. *F*, is a passage, 8 feet wide, leading from the main floor to the yard door, through which to throw out litter. Over this passage, and the granary, and store-room, may be stored grain in the sheaf, or hay. The main floor will accommodate the thrashing machine, horse-power, cutting box, &c., &c., when at work. A line of movable sleepers, or poles, may be laid across the floor, 10 feet above it, on a line of girts framed into the main posts for that purpose, over which, when the sides of the barn are full, either hay or grain

may be deposited, up to the ridge of the roof, and thus afford large storage. And if the demands of the crops require it, after the sides and over the floor is thus filled, the floor itself may, a part of it, be used for packing away either hay or grain, by taking off the team after the load is in, and passing them out by a retreating process, on the side of the cart or wagon; and the vehicle, when unloaded, backed out by hand. We have occasionally adopted this method, when crowded for room for increased crops, to great advantage. It requires somewhat more labor, to be sure, but it is much better than stacking out; and a well-filled barn is a good sight to look upon.

Underneath the body of the barn are the stables, root cellar, calf houses, or any other accommodation which the farm stock may require; but, for the most economical objects, is here cut up into stables. At the ends, *l, l*, are passages for the stock to go into their stalls; and also, on the sides, for the men who attend to them. The main passage through the centre double line of stalls, is 8 feet wide; and on each side are double stalls,

6½ feet wide. From the two end walls, the cattle passages are five feet wide, the partition between the stalls running back in a *slant*, from 5 feet high at the mangers to the floor, at that distance from the walls. The mangers *j, j*, are 2 feet wide, or may be 2½ feet, by taking an additional six inches out of the rear passage. The passage is, between the mangers, 3 feet wide, to receive the hay from the trap-doors in the floor above.



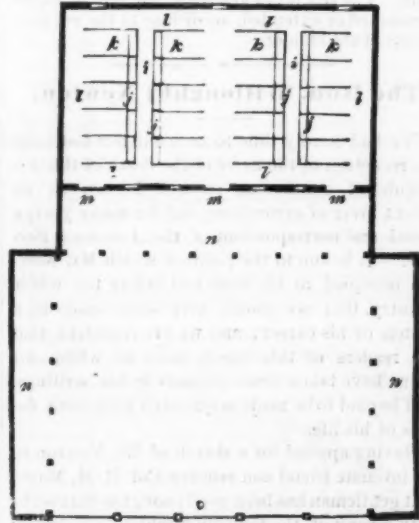
MAIN FLOOR PLAN.

The most economical plan, for room in tying cattle in their stalls, is to fasten the rope or chain, whichever is used (the wooden stanchion, or *stanchel* as it is called, to open and shut, enclosing the animal by the neck, we do not like,) into a ring which is secured by a strong staple into the post which sustains the partition, just at the top of the manger, on each side of the stall. This prevents the cattle in the same stall from interfering with each other, while the partition effectually prevents any contact from the animals on each side of it, in the separate stalls. The bottom of the mangers, for grown cattle, should be a foot above the floor, and the top two and a half feet, which makes it deep enough to hold their food; and the whole, both sides and bottom, should be made of two-inch, sound, strong plank, that they may not be broken down. The back sides of the stalls, next the feeding alleys, should be full 3½ feet high; and if the cattle are large, and disposed to climb into their mangers with their fore feet, as they sometimes do, a pole, of 2½ or 3 inches in diameter, should be secured across the front of the stall, next the cattle, and over the mangers—say 4½ feet above the floor, to keep them out of the manger, and still give them sufficient room for putting their heads between that and the top of the manger, to get their food. Cattle thus secured in double stalls, take up less room, and lie much warmer, than when in single stalls; besides the expense of fitting them up being much less—an experience of many years has convinced us on this point. The doors for the passage of the cattle in and out of the stables, should be five feet wide, that they may have plenty of room.

In front of these stables, on the outside, is a line of posts, the feet of which rest on large, flat stones, and support the outer sill of the barn, and form a recess, before named, of 12 feet in width, under which may be placed a line of racks or mangers for outside cattle, to consume the oats, or leavings of hay rejected by the in-door stock; or, the manure may be housed under it, which is removed from the stables by wheelbarrows. The low line of sheds which extend from the barn on each side of the yard, may be used for the carts and

wagons of the place; or, racks and mangers may be fitted up in them, for outside cattle to consume the straw and coarse forage; or, they may be carried higher than in our plan, and floored overhead, and hay or other food stored in them for the stock. They are so placed merely to give the idea.

There may be no more fitting occasion than this, perhaps, to make a remark or two on the subject of managing stock in stables of any kind, when kept in any considerable numbers; and a word may not be impertinent to the subject in hand, as connected with the construction of stables.



UNDER-GROUND PLAN AND YARD.

There is no greater benefit to cattle, after coming into winter quarters, than a straight-forward regularity in everything appertaining to them. Every animal should have its own particular stall in the stable, where it should *always* be kept, and in no other. The cattle should be fed and watered at certain hours of the day, as near as may be. When let out of the stables for water unless the weather is very pleasant, when they may be permitted to lie out an hour or two, they should be immediately put back, and not allowed to range about with the outside cattle. They are more quiet and contented in their stables than elsewhere, and eat less food than if permitted to run out; and are every way more comfortable, if properly bedded and attended to, as every one will find, on trying it. The habit of many people, in turning their cattle out of the stables in the morning, in all weathers—letting them range about in a cold yard, hooking and horning each other—is of no possible benefit, unless to rid themselves of the trouble of cleaning the stables, which pays twice its cost in the saving of manure. The outside cattle, which occupy the yard, are all the better, that the stabled ones do not interfere with them. They become habituated to their own quarters, as the others do to theirs, and all are better for being each in their own proper

place. It may appear a small matter to notice this; but it is a subject of importance, which every one may know who tries it.

It will be seen that a driving way is built up to the barn doors at the ends; this need not be expensive, and will add greatly to the ease and convenience of its approach. It is needless to remark, that this barn is designed to stand on a shelving piece of ground, or on a slope, which will admit of its cellar stables without much excavation of the earth; and in such a position it may be economically built. No estimate is given of its cost, which must depend upon the price of materials, and the convenience of stone on the farm. The size is not arbitrary, but may be either contracted or extended, according to the requirements of the builder.

The Hon. Willoughby Newton.

We had hardly time to notice in our last issue the reception of the news of the death of this distinguished gentleman, so well known as an ardent lover of agriculture, and for many years a friend and correspondent of the *American Farmer*. It is due to the position which Mr. Newton occupied in his State and before the whole country, that we should give some space to a sketch of his career; and we are confident that the readers of this paper, many of whom for years have taken much pleasure in his writings, will be glad to be made acquainted with some details of his life.

Having applied for a sketch of Mr. Newton to his intimate friend and relative, Col. R. M. Mayo, that gentleman has been good enough to furnish us with a copy of the following, which had already been furnished by him to the *Richmond Dispatch*.

DEATH OF WILLOUGHBY NEWTON.

On the morning of the 23d May, at five minutes before 5 o'clock, the Hon. Willoughby Newton died at his residence, Linden, in the county of Westmoreland, in the seventy-second year of his age.

Mr. Newton was born in December, 1802, at Lee Hall, in the county of Westmoreland. His father bore the same name, was a gentleman of high standing, and represented that county for several years in the House of Delegates. His mother, at the time of her marriage with Mr. Newton, was the widow of Richard Lee, commonly called Esquire Lee, of Lee Hall, a near relation of Richard Henry Lee, and of General Henry Lee, of Stratford. Mrs. Newton's maiden name was Sally Poythress. She was a daughter of Peter Poythress, Esq., of Branchester, Prince George, near Petersburg, and grand-daughter of Richard Bland, of Jordan's Point, in that county, one of the earliest and greatest vindicators of the rights of the Colonies.

At an early age Mr. Newton was sent to school at Elizabethtown, N. J., under the care of the late distinguished Dr. John Augustus Smith, then living in New York, his brother-in-law, who married Mr. Newton's half-sister, Lettice Lee.

On his return to Virginia, Mr. Newton was sent to William and Mary College, of which Dr. Smith had in the meanwhile been made President, where he was graduated, and then commenced the practice of law.

In 1825, Mr. Newton was elected to the House of Delegates, and married Miss Elizabeth Holt, of Williamsburg. She died within a year, leaving a son who did not long survive her. He continued to serve in the House of Delegates several years, and in 1829 was married to Mary Stevenson Brockenbrough, daughter of the late Hon. William Brockenbrough, of the Court of Appeals. A large family was the fruit of this marriage. After serving for several years more in the House of Delegates he retired from public life and devoted himself to the cultivation and improvement of his large landed estate. In this pursuit he literally showed the wisdom of the remark that "he that makes two blades of grass to grow where only one grew before, was worth the whole race of politicians put together." The writer well knows that when he first saw it, in 1827, the region roundabout Mr. Newton's birth-place and residence was one of the most impoverished and wretchedly cultivated in Virginia. He lived to see, at the time of the breaking out of the late war, in the place of this poor, neglected, and unsightly district, farms neatly enclosed, highly improved, and producing crops of wheat, corn, and clover, that would almost vie with those of the most favored regions of the State. It is but justice to say that this charming change was due to the efforts and example of Mr. Newton. Agriculture was his constant theme—with pen and speech—and above these, in unwearyed and industrious practical example and generous assistance to all worthy followers in his march of improvement, he led the way.

In 1843 the Whig party nominated Mr. Newton for Congress. He was elected over his competitor, the Hon. R. M. T. Hunter. The course of Mr. Newton, and especially his efforts in favor of the annexation of Texas, are a part of the history of those days. At the election in 1845 he was defeated by Mr. Hunter, and when the latter was elected to the Senate of the United States he was again defeated by the present General R. L. T. Beale. From that time till the war he remained at home, enthusiastically employed in his favorite pursuit of farmer, and contributor, from his varied reading and enlightened experience, to agricultural papers. He was among the founders of the State Society, and rose to be its president. To the great body of farmers and planters of Virginia his name is familiar as a household word; and we need say no more than this on this subject.

Mr. Newton was ever a true State-rights man. Every faculty of his was ardently devoted to the interests of the South; and when the hour came for men to rise up in defence of her rights and interests, he threw the whole weight of his talents and energies into the scales, and staked his all upon the issue. His patriotic zeal was warmly seconded by his wife, a lady who deserves to rank with noblest Roman matrons. She gave her not unwilling sons to the army, and employed herself in the most active labors to provide comforts and food and clothing for their gallant comrades. Her gallant sons sought

Augustine

no "bomb-proof places." With sabre or musket in hand they were ever at "the front." William Brockenbrough Newton sealed with his life's blood his devotion to his country; Willoughby Newton, Jr., lost a leg at the great battle of Chancellorsville; John B. Newton, broken down as private in the Fortieth Virginia regiment, still continued to serve as its surgeon.

The dark day of ruin came at last. Our heroic struggle over, nothing was left us save a hundred battle-fields crowded with the graves of our heroes. Princely fortunes were swept away, and their former owners sat among the ruins.—Thank God many of them live to show us examples of undimmed courage and dignified resignation. Of Mr. Newton, it may well be said "*impavidum ferient ruinae.*" He maintained in his disabled condition all that cheerful spirit, calm philosophy and ardent desire to be useful in his day and generation, which has characterized him through his life. Ruined in temporal goods—bearing the weight of threescore years and ten—afflicted for near two years with distressing disease—he sat surrounded by his wife and children, and children's children, cheerful, happy, and resigned. Thus this good and well-known citizen passed away.

"WHAT WE KNOW ABOUT TURNIPS," is the title of an unpretentious, but useful little manual, published originally in 1872, by Messrs. D. Landreth & Son, the well known seed-house of Philadelphia, and of which a new edition has just been issued. We have heretofore quoted from its pages, and we now give, as timely, the following extract on the mode of growing Ruta Bagas:

In the latitude of Philadelphia, we begin to think of sowing Ruta Bagas about the 10th of July, and, if everything is in readiness, make our first sowing by the middle of the month. The process is thus: Plough the land level, harrow lengthwise and cross wise, getting it into fine tilth, then draw shallow furrows 2½ feet apart, (3 feet is better where there is plenty of room to spare;) in these furrows the manure is spread; it may consist of any fertilizing material within reach. Of course decomposed matter is the best, whether it be vegetable or animal; and here, we remark, it is a good plan to prepare in advance a compost, which will readily disintegrate when spread. Where such is not at hand, any of the approved commercial fertilizers may be resorted to, but be sure and buy only from parties of good repute, of which, doubtless, there are many. We take this opportunity, however, to say, without disparagement to others, that, after a number of years' trial of the product of Baugh & Son, of Philadelphia, and the Northwestern Fertilizing Company, of Chicago, that we feel no disposition to order elsewhere. When the fertilizer, (if a super-phosphate or other commercial manure, at about equal cost, at the rate of 500 lbs. per acre) has been spread, it is a good practice to remove the hind teeth from an ordinary cultivator, so as to adapt it to the width of the furrow, and pass it once over the fertilizer, thus incorporating it with the soil. That done, the soil removed in forming the furrows, and a little more obtained on the opposite side, is returned. This process

will be found to form a ridge some inches higher than the level of the adjacent land. As it is not desirable, in our climate, where heat and drought (rather than excess of moisture, as in England, from whence the practice of ridging is derived,) prevail, we back down the ridges until they are nearly level, and which brings the seeds about to be sown, near the manure, so important to stimulate the young plants. Everything being now ready for sowing, with a drill, which is made to open the furrow, deposit the seed, close the furrows, and roll in the seed if necessary, we proceed to sow. The drill should be adjusted to sow not less than two pounds of seed per acre, if in drills or rows, 2½ feet apart,—not that so much seed is necessary, if any considerable percentage vegetates, and escapes the fly, the scorching sun, and other unfavorable influences. It is probable that if two ounces of seed could be evenly distributed, each grain germinate, and finally, succeed, there would be a sufficient number of plants to the acre; but it would be a very unwise procedure to stint the seed to save (for the present moment only) the pocket. The English, to whom we look for instruction in root-culture, use much more than two pounds per acre, but the turnip has been so generally grown in their country for generations, that the "fly," fed and pampered, has become a most formidable pest; so much so that great difficulty is sometimes found in securing a "stand."

If the sowing, which we have just described, should by any accident have failed, pass along the ridges a spike-tooth harrow to destroy any weed seed which may have sprouted, and re-sow, as before. If, from the time lost, it may be deemed too late to perfect a crop of Ruta Bagas with certainty, it may be better to make the re-sowing with flat turnips, which mature in a shorter season. Supposing the first sowing a success, allow the plants to reach the rough or second leaf, then proceed thus: Taking a light two-inch steel hoe in hand, and standing so as to bring a corner of the hoe in an oblique direction with respect to the line of plants, and near to them, the operator walks backward, drawing the hoe gently, and lightly skimming the surface of the soil, and with it all young weeds which may have sprung up cotemporary with the crop; returning, the opposite side of the row or drill is taken, thus leaving only a narrow line of turnip plants, nearly free from weeds. After a few days, when they have grown somewhat stronger, and are too rank for the fly to injure seriously, they may be "clumped," which is performed by taking a sharp, light, steel hoe of suitable size, say two inches wide, and standing facing the row, cut cross wise, so as to leave clumps of plants at intervals of four to five inches. At first the operator will cut timidly, fearing to destroy too many; but in a little while he will have gained courage, and proceed with increasing speed. It is surprising with what celerity such work may be performed by an expert, which any one may become with an hour's practice. We have boys who can pass along a row, cutting as they go, at half the usual walking speed. When the plants left in clumps have fully recovered from the disturbance, which is unavoidable, and again stand erect, the process of "singling" commences; this is simply pulling out with the finger and thumb and casting aside

all but the most promising plant in each group or clump.

After the lapse of a few days, when the selected plants have become upright and self-sustaining, a very shallow furrow may be cast from each side, the earth thus removed meeting in a ridge between the rows. If the weather is damp they may stand thus a few days, each day adding greatly to their strength; but if the weather be hot and dry, it is better to proceed at once with the hoeing, which done, the ridge of earth is to be leveled down by a spike-tooth harrow, or, in its absence, a cultivator with well-worn teeth, taking care not to cast the earth upon the young plants. This process of ploughing from the plants, and cultivating immediately after to return the soil, will need to be repeated several times during the season of growth; indeed it may be practiced with great advantage so long as the space between the rows is not obstructed by foliage, on each repetition inserting the plough deeper than before. Thus the crop will at length stand daily increasing in vigor and bulk, until the time arrives for placing it in winter quarters—in the latitude of Philadelphia, not later than the 20th November.

METHOD OF SAVING FOR WINTER FEEDING.

The English, who are our instructors in this branch of husbandry, and have taught us most of what we know on the subject, have some advantage in climate over us of Pennsylvania, though not of the South, which admits of feeding the bulbs as they stand in the ground, as well as under cover,—the stock, especially sheep, being grazed upon them, using hurdles to confine the flock to a limited space. A flock destined for the butcher being first turned in, where they may feed upon the better portion, then moved into a fresh enclosure, thus enticing the appetite. These are succeeded by a store-flock, which picks up the fragments, so that nothing is lost. This process corresponds with that of our prairie farmers, who turn their beef cattle into the standing corn (to us of the East, a bad practice,) and followed by hogs, which we are told, find every stray grain, and aid in preparing the land for the succeeding crop.

Maryland Agricultural College.

We notice by the daily papers that the commencement of this institution took place on the 26th ult., the graduating class numbering four. Bishop Pinckney, of Maryland, delivered an address to the students, and, according to the report in the *Gazette*, pointedly alluded to the absence of all of the members of the Board of Trustees, especially upon an occasion which should have been of especial interest to them.

From this it would seem that an evil long since felt and recognized still continues. The trustees, of old, pretty much allowed the college to "run" itself, and it was always very difficult to get a quorum to transact business, unless a professor was to be elected or an office to be filled. As a consequence a kind of close corporation resulted, thanks to the indifference or neglect of the gentlemen who generally composed the Board.

Hygiene.

SEASONABLE FOOD.—The wholesomeness of food depends nearly as much on the time it is taken as on the quantity. We have grown so luxurious in our physical as well as mental tastes, that we are constantly tempted to eat things out of season. Yielding to the temptation, as we often do, we pay the penalty, soon or late, in temporary or chronic derangement of our health. The meat which is excellent in cold, may not be desirable in warm weather; fish is best during Spring and early Summer; vegetables and fruit are nutritious when they are fully ripened by sun and season, and not artificially stimulated. Nature knows what she is doing; she furnishes for every latitude the productions fittest for such latitude. We need variety, not so much at one time, as from time to time. The delicacies of the season will not hurt us; but the delicacies out of season certainly will, if long continued. The appetite so jaded as to crave oysters in July, or strawberries in December, needs careful correction by the adoption of the simplest habits. The palate naturally relishes what Nature has near at hand. As a rule, not only is the simplest food the best food, but the most seasonable is, in the long run, the most appetizing. There is no difficulty in determining what we should eat, since the products of our climate show us plainly month by month. Fish, flesh and fruit, by their plumpness, tenderness and ripeness, themselves denote when they are ready to be eaten. A sound stomach will profit by whatever an unspoiled palate enjoys.—"*Home and Society*," *Scribner's for June*.

THE PHILADELPHIA BOARD OF HEALTH has just issued a pamphlet for distribution to parents and others interested in the management of children, relating to the treatment of children during hot weather. Briefly summarized, the suggestions are as follows, and will no doubt apply to the children of this city as well as those of Philadelphia. Bathe the child once a day in tepid water; avoid all tight bandaging; let the child sleep by itself in a cot or cradle; give it plenty of fresh air; keep the house sweet and clean, cool and well-aired; if an infant can get and thrives on natural food, none other should be given it while the warm weather lasts; where the supply is insufficient, goat's or cow's milk should be given in addition, but if the milk should disagree, a tablespoonful of lime water may be added to each bottleful; the nursing bottle must be kept perfectly clean, otherwise the milk will turn sour, and the child will be made ill; just before or during the hot weather, or, as a rule, until after the second summer, the natural diet of the child should not be changed. Appended to the above, are a number of plain rules for use in cases of emergency, and several recipes for special forms of diet are also given.

GOOD CROPPING.—Mr. C. S. Irman, of Pennsylvania county, with the help of his little son, only nine years old, and one man, hired only three months in the year, made a crop of tobacco, which brought \$1,800 in this market. Where else, we inquired, but in the region of the yellow leaf, could this be done?—*Danville Times*.

**The American Fruit Drier.**

The above illustration shows a new form of this Drying Machine, which has been so improved as to increase its effectiveness and capacity. It is adapted for drying all kinds of fruits and vegetables and is so simple as to be easily managed, whilst it does away entirely with the necessity for fruit jars or cans and sugar. It can be made useful in drying the surplus fruit or vegetables that cannot be profitably marketed fresh, either from a glut in the supply or lack of transportation facilities.

Disinterested persons, who have used these Driers, have spoken to us in the highest praise of them, and the samples of fruit and vegetables prepared by their aid are very excellent in quality and handsome in appearance.

One of the smaller sizes of this Drier may be seen at the *American Farmer* office. We have been so desirous of seeing this machine introduced into this section that we have consented to have one of them on exhibition, to give all information, and to take orders for them. See advertisement.

THE HOE is a simple but very important implement, yet upon it, too, has the march of improvement been made. Messrs. O. H. Hicks & Co. advertise in our pages their Lockwood Steel Hoe, a sample of which is placed in our office, and we take it for granted that Sambo will be able to perform fifty per cent. more work with this than with the old style of hoe.

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NEW ADVERTISEMENTS.

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 Canfield, Bro. & Co.—Watches, Diamonds, Rich Jewelry.
 C. J. B. M. Ichell—Improved Cotswold Sheep.
 W. W. Cobey—Combining Wool or Cotswold Sheep.
 A. B. Furquhar, York, Pa.—Agricultural Works.
 A Florist—To Capitalists.
 Wm. Davison & Co.—Paris Green for Potato Bug.
 Ryder's American Fruit Drier.
 American Farmer—Set of First Fifteen Vols. Am. Far.
 M. C.—Berkshire Pigs for Sale.
 J. Bolgiano & Son—Seeds.
 James W. Tyson—Jersey Heifers.

THE AMERICAN FARMER.

FLUE DUST FOR THE POTATO BEETLE.—Since writing the article on page 245, we believe from further information that we have received, that the dust from flues of iron furnaces, where coal is burned, is an effectual destroyer of these insects. Those convenient to such establishments will do well to make a note of it.

Baltimore Markets, June 27.

The quotations below are Wholesale Prices.

Breadstuffs.—*Flour*—Market steady. Howard St. Super \$4.35@4.75; do. common to fair Extra. \$5.00@5.50; do. good to choice do. \$6@6.75; do. Family \$7.50. Ohio and Indiana Super \$4.00 4.75; do. common to fair Extra \$5.00@5.50; do. good to choice do. \$5.75@6.00; do. Family \$6.25@7.50. City Mills Super \$4.25@4.75; do. low to Medium Extra. \$6.00@6.50; do. Rio brands, do. \$7.25. City fancy brands, \$9.75. Fine Flour, \$3.50@3.75. Rye Flour, \$4.25@4.75. Corn Meal, \$3.75@4.00.

Wheat.—Quiet. Sales of new Southern white 165@200 cents; new do., red, 175 cents; old amber 160@161 cents; old red, prime to good, 148@155 cents.

Corn.—In good demand and firm. Southern white 89 cents; do., yellow, 80@81 cents. Western mixed, 81@83 cents.

Oats.—Steady and quiet. Western mixed, 58½ cents; Southern 64@68 cents.

Rye.—Dull. Nominal at 90@95 cents.

Cotton.—Dull. Quotations nominal. Middling Upland 17½@17½; low middling, 16½@16½ cts.; Strict good ordinary 16 cents; good ordinary, 15½ cents.

Hay and Straw.—Demand light. We quote Clover at \$14 17; mixed hay, \$17@18. Good to prime Timothy \$30@32. Choice Cecil Co., \$34. Oat Straw, \$13; Rye Straw, \$10@12; Wheat do., \$11 per ton.

Live Stock.—*Beef Cattle*—Market active. Best on 53½, 6@7 cts.; generally rated first-class, 5@6 cts.; medium—a good fair quality, 4@5 cents; ordinary thin Steers, Oxen and Cows, 3½ 4 cents.

Hogs.—Supply light and demand fair. Prices quoted at 7½@8½ cents net.

Sheep.—Demand good, with prices ranging from 4 to 5½ cts., gross. Lambs, \$3@4 per head. Stock Sheep, \$3@3.50 per head.

Milk Feed.—Western Bran, \$18; City Mills Brown-stuff, \$32 per ton. Middlings 28@45 cents for light and heavy per bushel.

Molasses.—Muscovado 40@41 cents; Porto Rico, 40@65 cents; *Syrup*.—Calvert, 54@58 cents; Chesapeake, 43@47 cents; Canton Sugar House, 28@32 cts. in hhds. and bbls.

Provisions.—Quiet. Bulk Shoulders, 7½ cents; clear rib sides, 9½ cents. Bacon Shoulders, 7½ cents; Clear rib sides, 10 cents. Hams, 14@16 cts. Lard, 11½ cents. Mess Pork, \$18.50 per bbl.

Rice.—Carolina, 8½ cents; Rancon, 7½ cents.

Salt.—Liverpool Fine, \$2.15 2.25; Ground Alum, \$1.20@1.30 per sack. Turks Island, 40 cents per bushel.

Tobacco.—Market firm with good demand for all kinds. We quote as follows: Maryland, frosted \$3@4.50; sound common, \$5.00@6.50; medium dull, \$6.00 8.00; brown to red, \$7.00@9.00. Virginia common to good lugs \$4.00 6.00; common to medium leaf, \$6.00@7.00; fair to good leaf, \$9.00@10.00; selections \$10.00@14.00.

Wool.—Market firm. Unwashed, 31 35 cts.; burry do. 35 30 cts.; tub washed, 45@50 cts.; pulled, 35@38 cts.; Merino, 25 30 cents.

Whiskey.—Western, \$1.00.

Berkshire Pigs for Sale.

From 8 to 12 weeks old—price \$20 a pair.—Also one Boar Pig, 8 months old—price \$25; bred from imported stock, and very fine.

ADDRESS M. C.

ly-2t Care Editors American Farmer.

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Baltimore, June 26, 1874.

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I will sell at moderate prices a superior lot of Ram Lambs, a few Ewes and Yearlings, all of superior quality and careful breeding. Address

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CROSS ROADS P. O.,

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The blade of this Hoe is made entirely of steel of uniform thickness and temper. The eye is oval in shape, of best malleable iron, and being placed above the blade gives to the hoe a superior balance. The blade is so fitted to the eye as to leave nothing on the front to collect the dirt, and so riveted as to make it one of the strongest Hoes in use.

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THE AMERICAN FARMER.

A FLORIST, with an established trade extending to all parts of the United States and British Provinces, would like to open negotiations with some person of means in Baltimore or its vicinity, looking to the removal of the establishment to Baltimore, the facilities in its present location being somewhat limited. Is prepared to stock a first-class establishment.

Address FLORIST,
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The undersigned has decided to offer his RESERVED HERD at PRIVATE, rather than at public sale.

For Catalogues apply to
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THORNBURG & M'GINNIS'

LIME AND FERTILIZER SPREADER,

PATENTED 1873.

This machine spreads chip manures, fine barn-yard manure, and broadcasts lime, plaster, ashes and superphosphates; and also drills the same in rows any desired distance apart, taking two rows at a time, at rates of any quantity per acre down as low as one bushel. It also broadcasts small grains with fertilizers on lands too rough for the drill.

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aug-1y Willow Grove Springs, Woodstock, Va.

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This new and beautiful Hotel, located upon the site of "Old Fountain Hotel," extended by an elegant front on Baltimore street, is convenient alike to the business man and the tourist.

It is the only Hotel in Baltimore of the new style, embracing

ELEVATORS, SUITS OF ROOMS, with BATHS,

And all conveniences; perfect ventilation and light throughout, and was planned and built as a Hotel, new from its foundation.

Its elegant and convenient Office and Exchange Room, with Telegraph, &c., will at all times be at the disposal of the merchants and citizens of the city.

The location of the Ladies' Entrance on Baltimore street, and the beautiful Drawing Rooms connected therewith, will give to families more than the usual degree of quietude and seclusion.

The undersigned refers to his career of over thirty years as a Hotel Manager in New York and Baltimore, and feels confident, that with a new and modern house, he can give entire satisfaction to his guests.

To accommodate Merchants and others who visit Baltimore, the proprietor will charge \$3 per day for the rooms on fourth and fifth floors, making the difference on account of the elevation. Ordinary transient rates for lower floors, \$4 per day.

R. B. COLEMAN, Proprietor.

BALTIMORE, Md.

[nov-1y]

PACIFIC GUANO COMPANY'S SOLUBLE PACIFIC GUANO.

JOHN S. REESE & CO.

No. 10 South Street, Baltimore, Md.

General Agents.

CAPITAL.....\$1,000,000.

The use of this Guano since its introduction in 1864, and the annual increase of its consumption from a few hundred tons the first year of its use, to many thousands of tons, is the best attestation to its value as an efficient agent for the increase of the products of agricultural labor, as well as to the integrity of its production.

The large capital invested by this Company in this business, and its unusual facilities, enables it to furnish a fertilizer of the *highest excellence* at the *lowest cost* to consumers.

It is the policy of the Company to furnish the best fertilizer at the lowest price, and look to large sales and small profit for reasonable returns on capital employed.

This Guano is sold by Agents of the Company in all the markets of the Middle, Southern and Gulf States.

Price in Baltimore \$50 per ton 2,000 lbs.

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THE LARGEST HOUSE IN THE CITY.

PREMIUMS FOR AGRICULTURAL FAIRS FURNISHED.

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
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IMPROVED COTSWOLD
OR
COMBING WOOL SHEEP.

I offer for sale PURE BRED Rams and Ewes of this **SUPERIOR STOCK.**

At the last exhibition of the "State Agricultural Society of Maryland," my *Sheep* were awarded EVERY PREMIUM contended for. My recently imported Ram "Duke of Gloucester" is an animal of great size and beauty, DEFYING COMPETITION in this country.

 I refer to the Editors of the *American Farmer*, who have examined my stock. Address

C. J. B. MITCHELL,

Queenstown, Maryland.

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THE AMERICAN FARMER.

PARIS GREEN

FOR KILLING THE   POTATO BUG
AND COTTON WORM.

WE MANUFACTURE FOUR GRADES,

"DDDD,"

"DDD,"

"DD,"

"D,"

Packed in barrels, half barrels, 100 lb. kegs, and 14, 28 and 56 lb. Iron Cans. We have thoroughly tried it, and found it effectual and certain, if used as recommended by us:

Take 2 ounces of "DDDD" Paris Green,
Or 2½ ounces of "DDD," Paris Green

3 ounces of "DD" Paris Green.
¾ ounce of "D" Paris Green.

to 1 pound of flour; mix the flour with 3 gallons of water; strain the lumps out, then add the Paris Green; use a watering pot to sprinkle the plants, stirring occasionally while applying. To an acre of plants, it will require from 2 to 3½ lbs. of Green, according to quality used. For sale to the trade only by

3y-3m

WM. DAVISON & CO., Manufacturers, 104 W. Lombard St.

Buckeye Mower and Reaper, SWEEPSTAKES THRESHER AND CLEANER.

The Truth is mighty and will prevail!

25,400 Buckeye Mowers and Reapers,

AND

1,400 Sweepstakes Threshers

Sold in the United States alone during the season of 1873.

Farmers, do you want any more emphatic endorsement than this of the superior merits of these machines? Do not allow yourselves to be humbugged by the extravagant representations of agents for other machines.

The BUCKEYE and the SWEEPSTAKES are the STANDARDS, and when you buy either or both of them you are sure to get your money's worth, and to have machines that will last you, with proper care, 15 years and probably longer. We are prepared to prove that there are a large number of the above machines that have been in satisfactory use for the past 15 years, and are now ready to take their usual place in the coming harvest.

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They thus need no long, windy or labored argument to prove their efficiency.

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Also, Dealer in Mill Stones, Bolting Cloths, Smut Machines, Horse Rakes, &c.

[June-61.]

Ryder's American Fruit Drier.

This Machine combines cheapness in first cost, durability, simplicity, and practical utility in the most perfect manner. It is made in sizes especially adapted for

Farmers and Family Use.

It has been greatly improved since last season, and, it is claimed, will in a single year

SAVE ITS COST IN CANS AND SUGAR.

And that fruits prepared in it are superior in **Flavor, Color and General Appearance.** It will dry and preserve equally well all kinds of Fruit, Vegetables, and animal substances. By its use, also, inferior fruits can be partially saved and turned to account.

The DRIER is now made in different sizes, with heater and all complete, varying in price from \$50 to \$200, and having a drying capacity of from 5 to 50 bushels per day.

For further information, and for illustrated Circular and Price-List, address

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We invite the attention of Planters and Amateur Cultivators to our complete stock of the following:
PEARS, Standard and Dwarf.

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PEACHES, PLUMS and GRAPE VINES, together with other SMALL FRUITS of popular kinds.

ORNAMENTAL TREES, EVERGREENS and SHRUBS, with ROSES in great variety. A large stock of choice GERANIUMS, VERBENAS, and other bedding-out plants.

75 to 100,000 two and three year old OSAGE ORANGE HEDGE PLANTS.

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Manufacturers of
Flower Pots, Stone and Earthenware,
POTTERIES AND SALES ROOM,

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SAM. J. SHARPLESS,
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Sale of Albemarle, Va., Lands.

I will offer for Sale on the 6th of July next, that being the first day of Albemarle (Va.) Court, my **Buckeyeland Farm**, of 1,036 acres—600 of which is cleared; one-half bottom lands, well-drained and in grass, and on which is an abundance of lime and slate, a grist and saw mill, the toll being from 600 to 1,000 bushels. It is one of the very best grazing farms in Eastern Virginia. Also

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This may be worked by the purchaser in a farmer-like manner for five years by paying in advance 6 per cent. interest, and if he does not like it, I will take it back.

Also **My River Farm of 1,009 Acres**, 600 of which are cleared, one-half River bottoms; good improvements, Orchards, &c.

Terms: One-third Cash, the balance on liberal credits.

If not sold, two of them will be leased. Sale takes place at the Court-house.
je1 Geo. C. GILMER,
Charlottesville, Va.

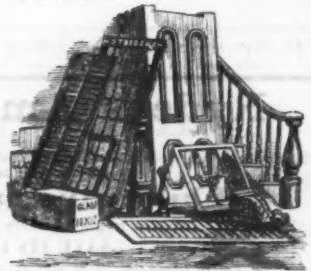
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The undersigned offers at private sale ONE PORTABLE STEAM ENGINE AND BOILER, 10 horse-power, on truck in good running order; STATIONARY STEAM ENGINE, 4 to 6 horse-power; CYLINDER BOILER, 19 feet long, 22 inches diameter; WESTINGHOUSE 30 INCH THRESHER AND CLEANER; FELTON 8 HORSE SWEEP-POWER; SINCLAIR & CO. 10 INCH THRESHER AND STRAW CUTTER; 6 HORSE IRON-AXLED WAGON, built by C. Slack; CHESTER CO. BARREL CHURN & HORSE-POWER; BLANCHARD CHURN; EMBRE BUTTER WORKER; SINCLAIR & CO. PORTABLE GRIST MILL; COMPLETE OUTFIT FOR BLACKSMITH'S SHOP; PLATFORM SCALES, two sizes; WHEELWRIGHT STUFF and other lumber.

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Sashes, Doors, Blinds, Mouldings, Brackets,
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PERFUMED CHEMICAL OLIVE SOAPS,
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UPPER JAMES REAL ESTATE AGENCY,
BY WILLIAM HOLMAN,
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Who offers for sale upwards of 12,000 acres of land,
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Catalogues sent on application. my-1f

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THE NEW FLORENCE.

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SAVED, \$50 by buying the Florence.

Every Machine Warranted.

Special Terms to Clubs and Dealers.

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Located on the Washington Branch of the B. & O. R. R.,
nine miles from Washington, and twenty-eight from
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The next session will commence on the 15th of Sep-
tember, 1874, and end the last week in June 1875. It is
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In addition to Agriculture and the sciences pertaining
thereto, a full Collegiate Course is taught. Students
who do not desire to take the whole course are allowed
within reasonable limits to select such studies as their
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There is no charge for Tuition.

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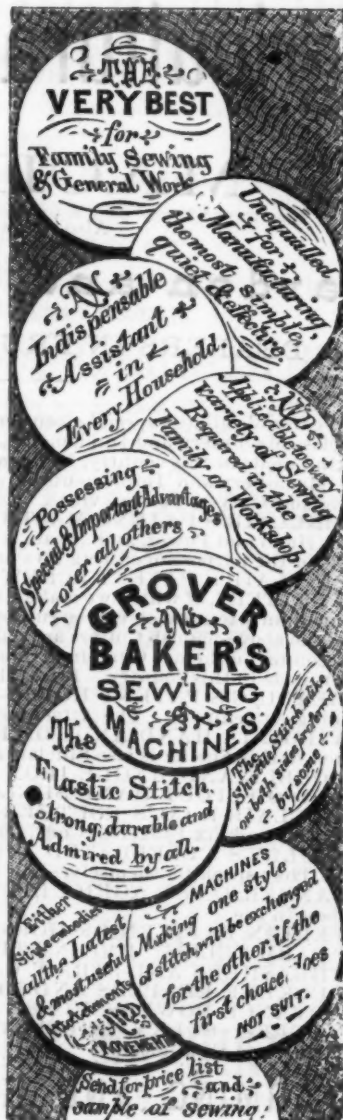
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MACHINERY.

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We would call the special attention of our friends and customers to the following first-class Machinery and Implements, which we guarantee to be equal to any article of the kind made in this country, being all of our own manufacture. We name, in part, such Machinery and Implements as are required by the Farmer and Planter for the Spring and Harvest Season, viz:

SINCLAIR'S PATENT MASTICATORS, of which we make four sizes, viz: Hand, Hand and Power, and Steam and Water Powers. These machines are the best in use for the purpose of cutting up Corn Stalks and Sugar Cane.

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READING'S PATENT HORSE-POWER CORN SHELLER, with and without Cleaning Attachment. The Attachment is Sinclair & Co.'s Improvement.

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BUCKEYE REAPERS AND MOWERS, all the different sizes and styles.

ADVANCE MOWERS, HORSE WHEEL-RAKES, HAY TEDDERS, HORSE HAY-FORKS, SULKY CULTIVATORS, PLOWS, HARROWS and CULTIVATORS, and all kinds of

FARMING AND HORTICULTURAL TOOLS.

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THOS. NORRIS & SON,

MANUFACTURERS AND DEALERS IN

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WESTLINGHOUSE THRESHERS AND CLEANERS.

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LEVER AND RAILWAY HORSE POWERS—most approved.

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OUR NEW ACME PLOUGH.

Bickford & Hoffman Grain Drills,

Plows, Harrows, Cultivators, Straw Cutters, Corn Shellers, and all kinds of Farming Tools. Fresh Field and Garden Seeds, Pure Ground Bone and other Fertilizers.

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We call particular attention to these wagons, which are of very superior make, and which we offer exceedingly low for cash.

CUCUMBER PUMPS,

WITH PORCELAIN-LINED IRON CYLINDERS.

We are prepared to furnish, wholesale and retail, the best and cheapest Cucumber Pumps in the country, to suit all purposes, from the small cistern to the deepest well.

Send for Circular and Price List.

FOR HARVEST, 1874.

W. A. WOOD'S WORLD-RENOWNED

SELF RAKE REAPER,

WITH AND WITHOUT MOWING ATTACHMENT.

A. E. WOOD'S MOWING MACHINES,

Universally acknowledged as good as, if not superior to, any others in use. The above Machines have taken more FIRST REMIUMS in this country and in Europe than any other Reaping and Mowing Machines extant. Send for Descriptive Circulars. For sale by

THOMAS NORRIS & SON, Agents,

141 Pratt street, Baltimore, Md.

may 1-ly.

SOLUBLE SEA ISLAND GUANO.

LONG GREEN, Baltimore Co., Md., November 18, 1872.

R. W. L. RASIN & Co.

Gentlemen :—I am pleased to bear testimony to the satisfactory results obtained from the Soluble Sea Island Guano purchased of you last spring. I have used it on corn, potatoes and vegetables with entire satisfaction. On part of my potatoes I used Peruvian Guano and Bone in much larger quantity than Sea Island Guano, but in the growth and yield the difference was very marked in favor of the Sea Island. I do most confidently recommend the use of it to the farming community, and should the standard be maintained I feel confident you will soon find ready sale for it in large quantities. Very respectfully, your friend, &c.,

SAMUEL M. RANKIN.

The Best Guano on the Market. Ahead of Best Peruvian.

NEWSOM'S DEPOT, Southampton Co., December 6, 1873.

Gentlemen :—I hereby certify that the Soluble Sea Island Guano is the best Guano in the market for cotton, corn, potatoes and melons, and is far ahead of the best Peruvian Guano. Will want three tons next year. Yours truly,

DR. J. H. GRIFFIN.

My Neighbors will bear Testimony with me.

BOYKIN'S DEPOT, Va., October 4, 1873.

Gentlemen :—Yours in reference to the Sea Island Guano I purchased of you last spring is received and noticed. I regard it as a No. 1 fertilizer, and my neighbors bear will testimony with me. I applied it under cotton, corn and sweet potatoes, at the rate of 200 lbs. to the acre, and am perfectly satisfied with the effect and result. I have had no rust, and the bolls continue in good state.

Yours truly, E. B. BEATON.

P. S.—If to be had, I expect to use the Sea Island next year.—E. B. B.

"I prefer it to any I have ever used."

November 20, 1873.

MR. BOOKER :—Your letter is just to hand. I reply I can say I am highly pleased with the Sea Island Guano. I prefer it to any I have ever used, pound for pound. I used it at the ratio of two hundred (200) pounds to the acre. I will make some 1,500 pounds to the acre of tobacco. The crop doesn't seem to suffer from drought. It ripens yellow and forward on this land. I followed with wheat. It is looking fine.

Respectfully,

A. H. OWEN.

PURE OHIO GROUND BONES

at market prices, and

GERMAN POTASH SALTS

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BONE DUST---BONE FLOUR!

ANALYSIS.

Ammonia.....	3.69
Phosphoric Acid.....	25.49
Equal to Bone Phosphate of Lime.....	55.65

GROUND AT OUR OWN WORKS, AND

WARRANTED CHEMICALLY PURE.

Superior in quality, and in finer mechanical condition than any other manufactured in this vicinity.

Price \$45 per Ton in Bags.

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WHOLESALE AND RETAIL.

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Paper Hangings and Window Shades,
WINDOW AWNINGS, MOSQUITO AND FLY-NETS.

Wall Papers and Window Shades of all grades and styles. Workmen sent to all parts of the country. Just received a choice assortment of different styles. Venetian Blinds made and repaired.

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Manufacturers of

MACHINE-MADE POTS.

Pots for Propagating Cotton Plants for Early Planting, Pots for forcing Jute,
also Turpentine Pots.

These Pots are made with the most approved machinery from tempered clay. The quantities made by us per day are from 3,000 to 6,000.

We have always on hand a large assortment of FLOWER POTS. Having improved facilities for the manufacture of FLOWER POTS, and giving the same our entire attention, we are enabled to supply the market with an article, which for neatness, durability and cheapness we defy competition.

These Pots can be safely shipped to any part of the United States in lots to suit; also, URNS, BIRD BOXES and HANGING BASKETS.

LINTON & CO.

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Corner Lexington and Pine Sts., Baltimore, Md.

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A large stock of Fine Furniture constantly on hand and made to order.

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**MARYLAND BRITANNIA
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GOLD AND SILVER PLATE WORKS.**

ESTABLISHED 1850.

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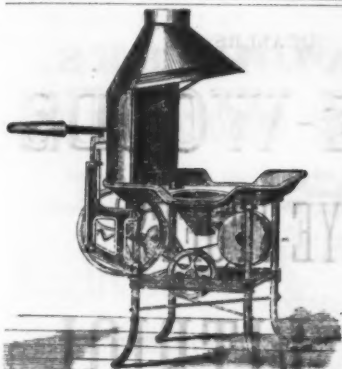
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Repairing and Replating done as to look equal to new ware.

may-ly.



Keystone Portable Forges.

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EVERY FARMER SHOULD HAVE ONE, and save money and time by doing HIS OWN REPAIRING, &c.

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Lime, Bricks, Sash and Mill Work.

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Which for DURABILITY, BEAUTY and ECONOMY, is unsurpassed by any other PAINT MANUFACTURED, and is already mixed for use, of all the different shades of color to suit the taste, and is equally good for wood, stone or iron, and will not crack nor chalk off by friction, and will preserve its color twice as long as the best Lead Paint. It is sold only by the gallon, and one gallon will cover twenty square yards of smooth surface two coats.

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Or any other kind of Printing, in all colors, can have the same executed through this office in the handsomest style, and at the very lowest prices. Orders by mail promptly attended to.

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DEALERS IN



MANUFACTURERS AND
IMPORTERS OF
Pure Ground Bone
AND
CHEMICALS
FOR
FERTILIZERS.
36 & 38
South Charles St.
BALTIMORE, MD.

DYE-WOODS

DYE-STUFFS,

OIL VITRIOL,

Glue, Indigo, Madder, Bi-Carbonate of Soda, &c.

Nos. 36 and 38 South Charles Street,

jan-1y

BALTIMORE, MD.

WILSON & CO.,
63 SECOND STREET, BALTIMORE,

MANUFACTURERS OF
FIRE AND WATER PROOF
IMPROVED PLASTIC SLATE ROOFING
AND DEALERS IN
ENGLISH ROOFING FELT.

The PLASTIC SLATE IMPROVED, as a roofing material, stands unrivalled. As a mastic it adapts itself to every SHAPE and SLOPE, NON-COMBUSTIBLE, IMPERVIOUS, NON-EXPANSIVE and UNDECAYING. FROST does not CRACK nor HEAT DISSOLVE it, possessing all the advantages of a sheet slate roof without its joints and crevices. Perfectly FIRE PROOF, and insures at same rates as slate or metal roofs. It is unequalled as a coating for RAILROAD and FARM BUILDINGS.

LEAKY SHINGLE ROOFS.

It frequently happens that house owners wish to avoid the expense of taking off shingles and running the risk of uncovering the house. To accomplish this we recommend the use of the **ENGLISH ROOFING FELT**, which by far supercedes the common tarred paper. It has been proved by experience that roofs covered in this manner will stand for YEARS in places where other roofing materials have FAILED.

OLD METAL ROOFS can be covered with this material, making them to last many years, and more durable than several successive coats of paint, at half cost of a new roof.

FOR DAMP WALLS, as a remedy, it is unequalled and an entire success.

Orders for shipping promptly attended to.

WILSON & CO.,
No. 3 Rialto Building,

63 SECOND STREET, BALTIMORE.

jan-1y

THE AMERICAN FARMER.

JOHN C. DURBOROW,

GENERAL AGENT FOR

THE KIRBY MOWERS AND REAPERS,

55

Light street,

BALTIMORE,

MARYLAND.



55

Light street,

BALTIMORE,

MARYLAND.

The KIRBY COMBINED REAPER AND MOWER with BALTIMORE SELF-RAKE received FIRST PREMIUM at Carroll County, Frederick County and Montgomery County, Md., FAIRS, October, 1873. The BURDICK INDEPENDENT REAPER with BALTIMORE SELF-RAKE received FIRST PREMIUM and DIPLOMA at Maryland State Fair, 1873. The KIRBY TWO-WHEEL MOWER was awarded the FIRST PREMIUM at Carroll County, Frederick County and Montgomery County, Md., FAIRS; and also, at Leesburg, Va., Fair, 1873.

SIMPLE, STRONG AND DUBABLE.

POSITIVELY NO SIDE DRAUGHT, NO WEIGHT ON THE HORSE'S NECK. Extras and repairs constantly on hand. Send for Circular and Price-List. Also, DEALER IN ALL KINDS OF

Agricultural Implements, Cucumber Pumps, Seeds, Fertilizers, &c.

JOHN C. DURBOROW,

dec-1y

55 Light Street, near Pratt, Baltimore, Md.

FARMERS SAVINGS BANK!!

**KNICKERBOCKER
LIFE INSURANCE CO.
OF NEW YORK.**

ASSETS \$8,300,000.

ALL KINDS OF POLICIES ISSUED.

SAVINGS BANK INSURANCE A SPECIALTY.

Every Policy shows its cash surrender value at the end of the First, Second, Third and every year of the continuance of the Policy.

EXAMPLE.

ENDOWMENT—At 30, \$1000 payable at 40, or at previous death. Premium \$88.23. Cash surrender value at end of first year, \$77.74; at end of second, \$162.15; end of fifth year, \$440.02, or \$1.18 LESS than the amount paid in.

Payable at Death or 75—Age 40, \$1000. Premium \$34.01. Cash surrender value at end of second year, \$18; at end of third year, \$35.56.

We respectfully call the attention of the public to the above card, and can assure them that no other Company offers so great an inducement for the investment of their money where so large a return is guaranteed, and brings LIFE INSURANCE WITHIN THE REACH OF ALL.

Parties desiring information or insurance in this Company will address or call upon the undersigned, who will take pleasure in furnishing it.

nov-1y

WM. B. BROWN & CO., Gen'l Agents, 22 Second St., Baltimore.

GARDEN SEEDS,

Guano, Bone, Plaster and Fertilizers,
CLOVER, TIMOTHY, ORCHARD,

KENTUCKY BLUE,

And other Field Grass Seeds.

Lawn and Ornamental Grass Seeds.



BUCKEYE SELF-DISCHARGING HORSE RAKE.

AGRICULTURAL

AND

Garden Implements

OF EVERY DESCRIPTION.

We invite the attention of Farmers, Gardeners and others to our complete stock of Implements, Seeds, &c., in which will be found all articles pertaining to our business. We make specialty of each department of our business in their respective seasons, and guarantee everything as represented. We have just secured a new supply of GARDEN SEEDS of the latest and best varieties, all of which are fresh and true to name.

We are agents for the celebrated "GUANAHASTI" GUANO, which is being introduced in this market. It is esteemed by many as equal to Peruvian Guano, and sells at \$40.00 per ton.

In our stock of implements we include an assortment of the very best in the market—among which are the "MEADOW LARK" MOWER, warranted equal in efficiency of working to any other machine in the market, and sells at \$95.00; with self-rake attachment, as a combined reaper and mower, \$175.00.

**Buckeye Self-discharging Wheel Horse Rake,
Hand-delivering Wheel Rakes,**

Bullard's Hay Tedder,

**Hagerstown Grain, Seed & Fertilizer Drill,
Empire Thresher and Cleaner,**

Champion Rye Thresher,

Thornburg & McGinnis' Lime Spreader,

Pelton and Railway Horse Powers,

Pioneer Stump Puller,

Steel Plows, &c.

GRIFFITH, BAKER & BRYAN,

41 & 43 N. Paca Street,

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BALTIMORE, MD.



PENNSYLVANIA ROUTE,

FORMED BY THE

NORTHERN CENTRAL

AND

PENNSYLVANIA RAILROADS

ON THE

West, Northwest and Southwest,
To PITTSBURG, CINCINNATI,
LOUISVILLE, INDIANAPOLIS,
CHICAGO, ST. LOUIS,

AND ALL OTHER

PROMINENT POINTS.

BALTIMORE & POTOMAC

AND

Alexandria & Fredericksburg Railways

ON THE SOUTH TO

Washington, Richmond,

AND ALL POINTS IN THE

Atlantic and Gulf States.

THE ONLY

ALL RAIL LINE

WITH NO

OMNIBUS TRANSFER AT WASHINGTON.

NORTHERN CENTRAL

AND

PHILADELPHIA and ERIE RAILWAYS

ON THE NORTH TO

HARRISBURG, WILLIAMSPORT, ELMIRA.

WATKINS GLEN, ROCHESTER, ERIE,
BUFFALO, NIAGARA FALLS.

Baggage called for and checked at Hotels and private residences through to destination. Sleeping and Parlor Car accommodations secured.

Through tickets sold and information given at company's office,

N. E. Corner Baltimore and Calvert Streets,

At Depot N. C. Railway,

UNION DEPOT, CHARLES STREET STATION,

And PENNSYLVANIA AVENUE STATION.

ED. S. YOUNG,

Gen'l Passenger Ag't.

D. M. BOYD, Jr.,

Gen'l Passenger Ag't.

B. & P. and N. C. R.R.'s.

Pennsylvania R. R.

SAMUEL T. DEFORD, JR.,

Southeastern Agent.

MACKENZIE BROS.,

Importers, Manufacturers and Dealers in

SADDLERY HARDWARE AND COACH FURNITURE,

Oils, Paints, Varnishes, Iron and Steel Carriage Bolts,

Horse-Covers, Lap Rugs and Fly Nets,

Saddle-Trees, Wood Stirrups, Gum Horse Covers.

Depot and Baltimore Agents for Philadelphia

Azle Works and Henry's Patent One-Plate Springs.

338 W. BALTIMORE STREET,

dec-1y

Baltimore, Maryland.

ESTABLISHED 1835.

GEORGE W. WEBB, GOLDSMITH & JEWELLER,

S. E. Corner Light and Baltimore Streets,

IMPORTER AND DEALER IN

FINE WATCHES, RICH JEWELRY,

STERLING SILVER AND PLATED WARE.

Every attention paid to neatness and durability in the manufacture and repair of Jewelry. Fine Watches repaired by experienced workmen. Hair Braiding in all its varieties. Orders attended to with despatch. dec-1y

WE HAVE HESITATED ABOUT BREAKING THE MARKET, BUT THERE IS NO HELP FOR IT. WE HAVE OVER \$100,000 IN MEN'S AND BOY'S

CLOTHING

AND GOODS FOR MEN'S WEAR,

And we cannot afford to carry them. Good times are coming, but we cannot sell Winter Clothing in Summer time, any more than people can wear Summer Clothing in Winter time; and besides, we will not allow our stock to become old.

J. H. SMITH & CO.

MARBLE HALL BUILDINGS, N. E. COR.

BALTIMORE AND FREDERICK STREETS.

dec-1y

STEAM MARBLE WORKS.

BEVAN & SONS,

No. 70 HOWARD ST., NEAR SARATOGA.

Would call attention to their fine collection of MONUMENTS, TABLETS, &c.; GRAVESTONES FOR CEMETERIES; also a varied assortment of MARBLE MANTELS, and are prepared to execute all kinds of Marble Work for building. mar-ly

PRINTING FOR EVERY BUSINESS.
AMERICAN FARMER OFFICE.

The GERRISH CABINET ORGAN,

In Imperial cases, with flexible sliding covers,

New style, and Superior in Tone and Touch to all other Organs. At very low prices. Send for Circulars and Price list to JAMES M. DEEMS, AGENT, corner Baltimore and Paca streets, over the People's Bank, Baltimore, Md. oct-ly.

S CALES.—Every farmer should have a pair of scales. We can furnish them to weigh a quarter of an ounce up to the largest hay wagon, on very liberal terms at the American Farmer Office. jan-ly

MORO PHILLIPS'

GENUINE IMPROVED SUPER-PHOSPHATE OF LIME. STANDARD GUARANTEED.

Reduced in price, and improved in quality by the addition of Potash. This article is already too well known to require any comments upon its Agricultural value. Thirteen years' experience has fully demonstrated to the agricultural community its lasting qualities on all crops, and the introduction of Potash gives it additional value.
PRICE \$50 PER TON, 2,000 LBS. Discount to Dealers.

PURE PHUINE.

SUPERIOR TO PERUVIAN GUANO. Patented April 29, 1860. Manufactured by MORO PHILLIPS.
PRICE \$50 PER TON, 2,000 LBS. Discount to Dealers. For sale at Manufacturer's Depots:

110 S. DELAWARE AV., Philadelphia, Pa.
95 SOUTH STREET, Baltimore, Md.

And by Dealers in general throughout the country. Pamphlets mailed free on application.
ap-ly MORO PHILLIPS, Sole Proprietor and Manufacturer.

MONUMENT IRON WORKS.

DENMEAD & SON,

Cor. North and Monument Streets, Baltimore, Md.

MANUFACTURERS OF STATIONARY AND PORTABLE

Steam Engines and Boilers OF ALL SIZES.

DAVID'S PATENT PULVERIZING MILLS, for Guanos, Bones, Ores, Clays;
also, Flour Making.

SEND FOR CIRCULAR.

ap-ly

BALTIMORE

RETORT AND FIRE BRICK WORKS.

GEORGE C. HICKS & CO.

MANUFACTURERS OF

CLAY RETORTS, TILES, FIRE BRICK,

VITRIFIED STEAM-PRESSED

Drain and Sewer Pipe, Stove Lining, &c.

ap-ly *Manufactory, Locust Point, Balt. Office, 4 S. Holliday St.*

Established]

A. E. WARNER,

[1811.

Manufacturer of

Silver Ware & Rich Jewelry,

English, Swiss and American WATCHES of the Best Makers;

Importer and Dealer in Diamonds, Fine Watches,
Silver-Plated Ware, Table Cutlery, &c.

WEDDING PRESENTS,

Premiums for Agricultural Fairs, Fine Bronzes, Opera Glasses and Shell Jewelry, &c.

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No. 135 W. Baltimore Street, near Calvert, Baltimore.

THE AMERICAN FARMER.

IMPORTANT TO FARMERS, DAIRYMEN and COUNTRY MERCHANTS!

FLETCHER E. MARINE,
GENERAL COMMISSION MERCHANT,

ESTABLISHED 1855,

No. 45 West Pratt Street, Baltimore, Md.

Dealer in Flour, Meal, Grain and Feed, Hay and Straw, Dried Fruit, Butter and Cheese, Guano and other Fertilizers: also Lumber, Staves and Tan Bark.

Consignments of produce, &c., respectfully solicited. Our charges are only the customary commission and the legitimate expenses of transportation and handling in the city.

20,000 bushels of ASHES on hand.

FLETCHER E. MARINE.

oct-1y

No. 45 W. Pratt Street, Baltimore, Md.

V. O. EARECKSON,
LUMBER DEALER,

West Falls Avenue, first Yard South of Pratt St. Bridge.

Building Lumber, Shingles, Laths, Palings,

FENCING. &c.

LIME, BRICKS, SASH, DOORS AND MILL WORK

may-1y

AT THE LOWEST PRICES.

IMPORTANT IMPROVEMENT IN FERTILIZERS.

GERMAN POTASH SALTS,

Imported directly from the mines, high and low tests.

Orders of Manufacturers promptly executed in deliveries to suit.

STOCK ON HAND FOR SALE VERY CHEAP.

Muriate of Potash, Kainit, &c.

Also for sale, GROUND BONE, guaranteed strictly pure, testing 4.112 Ammonia, 47.010 Bone Phosphate of Lime, GUANO, &c.

PLEASE CALL FOR CIRCULARS.

TATE, MÜLLER & CO.

oct-1y

52 S. Gay St., Baltimore, Md.

D. KNOX, late of R. Sinclair & Co.

WILLIAM DICKSON.

D. KNOX & CO.

DEALERS IN

AGRICULTURAL IMPLEMENTS AND MACHINERY.

GROWERS AND IMPORTERS OF

Garden, Field and Flower SEEDS, Trees, Plants, Fertilizers, &c.

Agents for DOTY'S WASHING MACHINES, CUCUMBER PUMPS, MONTGOMERY'S WHEAT FAN,

"SUPERIOR" MOWER AND REAPER.

No. 2 Howell's Block,

oct-12a

CAMDEN STREET, NEAR SHARP, BALTIMORE, MD.

Taylor's Rotary Engine,

(PATENTED MARCH 20, 1873.)

This Engine is adapted to any place where power is needed. For hoisting purposes, vessels, boats, &c. Some of its advantages are: First—Simplicity. Second—The *small* space it occupies, one of twelve-horse power occupying only two feet square space. Third—It reverses INSTANTLY, turning either way at will of operator. Fourth—It has *no dead center*. Fifth—It requires *less* steam, consequently less boiler room for same amount of horse-power.

The Excelsior Portable and Agricultural Engine.

Heater inside boiler, (no freezing of pipes,) cylinder incased with steam, consequently using *dry* steam instead of wet steam. Has *more good points* than any *Portable or Agricultural Engine* in the market. **STATIONARY ENGINES** of *most approved styles*. Return Tubular Boilers, all sizes.

VERTICAL ENGINES AND BOILERS,

3, 5 and 7 Horse Power—simple, durable and cheap.

CIRCULAR SAW MILLS,

SINGLE AND DOUBLE.

Adapted to *any mill site*. Built out of the *best material*. *Strong, durable and easily operated*. **SOLD ON EASY TERMS.**

DIAMOND STATE SEPARATORS.

We claim *simplicity, durability and capacity to do good work* in all kinds of grain, and with *any kind of power*, from two or three-horse tread, six or eight-horse sweep power, or a four or six-horse engine. First—Its separating the straw from the grain is *perfect*. It has no rakes or beaters. Second—Its riddles, which are *entirely different* from any machine in the market, make its cleaning of grain entirely free from straw, &c., and fit for market. Third—It has a feeder's duster which protects the feeder from the dust. Fourth—It is the simplest machine built; has only two belts, is easily handled and runs *lighter* than any machine doing the same amount of work.

Westminster Triple-Geared Power:

Simple and compact, runs light, has a quick motion, mounted on wheels or down.

IMPROVED HARMAN HORSE-RAKE

Is easily operated by a boy; does not dig and scratch the soil, and in grass or grain has no superior. Runs light and is built in the best manner. We solicit a trial.

Lime and Fertilizer Spreader

Will spread LIME, PLASTER, ASHES FERTILIZERS AND FINE MANURES, and drill in rows if desired. Will spread from 5 to 100 bus. Lime per acre, as desired. It is built in the best manner, and will spread as much in a day with a boy and a pair of horses as fifteen men by hand; while it has no equal in the evenness of its spreading. Every machine warranted. We have the most flattering testimonials of its utility.

HOMINY MILLS,

SELF-SHARPENING GRIST MILLS,

CORN CRUSHERS,

WOOD AND TABLE SAWS,

FORCE PUMPS,

PLOWS OF ALL SIZES,

MILL MACHINERY, &c., &c.

SEND FOR CIRCULARS. AGENTS WANTED.

Address

Taylor Manufacturing Co.

Jan-1y

Westminster, Md.

HUGH SISSON, STEAM MARBLE WORKS,

Cor. North and Monument Streets,

Importer and Dealer in Foreign and Domestic

MARBLE & STATUARY.

The Trade supplied with MARBLE IN BLOCKS, or cut to size, at Lowest Rates.

REPOSITORY AND SALES ROOMS,

No. 140 W. BALTIMORE STREET,

Between Calvert and North (Rinehart Buildings), where may be seen
a Choice Collection of

STATUARY, MANTELS,

FURNITURE SLABS,

COUNTERS, TILE,

MONUMENTS, TOMBS,

GRAVESTONES,

CURB and POSTS

my-6t

for Cemetery Lots, &c.

NOAH WALKER & CO.

THE

Celebrated Clothiers

OF BALTIMORE, MD.

Announce the introduction of a plan of ordering

CLOTHING AND UNDERWEAR BY LETTER,

To which they call your special attention. They will send on application their improved and accurate RULES FOR SELF-MEASUREMENT, and a full line of samples from their immense stock of

Cloths, Cassimeres, Coatings, Shirts, &c. &c.

A large and well-assorted stock of READY-MADE CLOTHING always on hand,
together with a full line of FURNISHING GOODS.

NOAH WALKER & CO.

Manufacturers and Dealers in Men's and Boys' Clothing and Furnishing Goods,
either Ready-Made or Made to Order.

165 and 167 W. BALTIMORE STREET, Baltimore, Md.

oct-1y

ALFRED H. REIP.

J. HENRY REIP.

MANUFACTURERS OF PURE

REIP & SON,

No. 1 GROUND PLASTER

MANUFACTURERS OF

C. S. & E. B. FREY,

Plain and Japanned Tin Ware,

No. 18 HARFORD AVENUE, BALTIMORE, MD.

And dealers in Wooden Ware and Housekeeping Articles.

And dealers in Corn Husks. Always buying and pay
the Highest Cash Price

Agents for the Downer Mineral Spring Co.
335 W. BALTIMORE STREET,

feb-1y

BALTIMORE.

FOR CORN HUSKS.

feb
121

THE AMERICAN FARMER.

BONE DUST & BONE MEAL.

"The Standard in America."

Ammonia..... 5

Bone Phosphate of Lime..... 54

845 Per Ton, in Bags.

MARYLAND SUPER - PHOSPHATE

And Tobacco Sustain.

750 lbs. Peruvian Guano.

1,100 lbs. Bone Dust.

150 lbs. Potash.

850 Per Ton, in Bags.

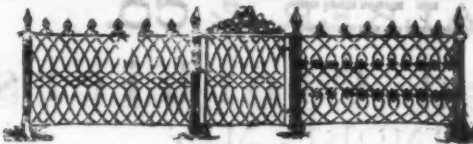
DISSOLVED OR VITRIOLIZED BONE,

848 Per Ton.

No. 1 PERUVIAN GUANO, OIL VITRIOL (warranted full-strength), MURIATE POTASH, SULPHATE OF SODA, NITRATE OF SODA, SULPHATE OF AMMONIA, And other Chemicals for making Super-Phosphates and Fertilizers, at Wholesale Prices.

JOSHUA HORNER, Jr.

54 S. Gay St., Cor. Chew and Stirling Sts., and 178 Forrest St.



WIRE RAILING

AND

ORNAMENTAL WIRE WORKS.

DUFUR & CO.

No. 36 North Howard Street, Baltimore, Md.
MANUFACTURE

Wire Railing for Cemeteries, Balconies, &c.

SIEVES, FENDERS, CAGES, SAND and COAL SCREENS, WOVEN WIRE, &c.

feb-ly

Also, Iron Bedsteads. Chairs, Settees, &c., &c.

GEORGE PAGE & CO., Machinists and Founders.

Portable and Stationary Steam Engines and
Boilers, Patent Portable CIRCULAR SAW MILLS,
Portable Grist Mills, Horse Powers, Leffel's
Turbine Water Wheel, &c.

No. 5 N. SCHROEDER STREET, near W. Baltimore street,

feb-ly

BALTIMORE, MD.

THE AMERICAN FARMER.

STRATTON'S GENT' FINE FURNISHING GOODS.

DRESS SHIRTS A SPECIALTY.

No. 161 WEST BALTIMORE STREET,

Four doors above the old stand and two doors below Neah Walker & Co.'s,

oct-ly

BALTIMORE, MD.

JOHN C. HACHTEL & CO.,

MANUFACTURERS OF

HACHTEL'S AMMONIATED SUPERPHOSPHATE,
PURE DISSOLVED BONE, and
TOBACCO FERTILIZER.

These brands are prepared from the best materials which can be obtained, and contain in a soluble condition every element necessary to the growth of the plant and the formation of the grain. Rich in Ammonia, Soluble Phosphates and Potash—always in fine dry condition for the drill. Orders respectfully solicited. We also deal in KALINIT, (Potash Salts,) which we recommend as a top-dresser for all crops, in addition to Phosphates or Bone.

dec-ly

OFFICE—14 Bowly's Wharf, Baltimore, Md.

JAMES L. FREY.

GEORGE E. BOWERS.

JAMES L. FREY & CO.

MANUFACTURERS OF

Spring, Hair, Husk and Cotton MATTRESSES,

Feather Beds, Pillows, Bolsters, &c.

No. 84 W. BALTIMORE STREET,

Between Gay and Holliday Streets,

Baltimore, Md.

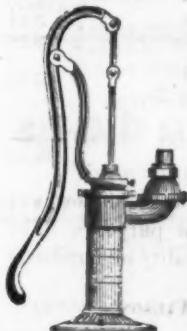
FACTORY—S. E. CORNER CHEW AND CAROLINE STREETS.

Old Feather Beds Steamed. Steamboats, Hotels, &c., furnished at the Lowest Prices.

dec-ly

**HUBBALL & DUNNETT,
HYDRAULIC ENGINEERS,**

6 & 8 N. Liberty St., and 171 N. Eutaw St., Baltimore.



Public and Private Buildings Heated by Steam or Hot Water; Plumbing of every description, with Lead, Galvanized or Plain Iron Pipe; hot and cold water; Hydraulic Machines, various patterns, simple in construction and durable, viz: Steam Pumps, positive action; Hot Water Pumps, Acid Pumps, Double Action Pumps, Brass and Iron; Water-Wheel Pumps, Water Rame, Wind Mill Pumps, Horse-Power Pumps, Steamboat Pumps for extinguishing fire; Springfield Gas Machines for lighting Country Houses, Hotels, Factories and Railroad Stations, &c., &c.

Having experienced workmen in our employ, any work entrusted to our care will be promptly and satisfactorily done.

We have the privilege to refer to the following gentlemen as to our capability to do the above work: Hon. Reverdy Johnson, Hon. Henry G. Davis, Hon. Wm. Pinkney Whyte, Francis T. King, Esq., J. H. B. Latrobe, Esq., Samuel G. Wyman, Esq., William G. Harrison, Esq., William W. Taylor, Esq., John Gregg, Esq., Wm. F. Burns, Esq., J. W. Allnutt, Esq., Messrs. Baldwin & Price, Architects.

dec-ly

ESTABLISHED 1839.

TO FARMERS, PLANTERS and GARDENERS

Pure Ground Bone

MANUFACTURED BY

JOHN BULLOCK & SON,

Factory: Washington Road, Baltimore, Md.

Store: No. 61 S. Gay Street, Baltimore, Md.

P. O. Box 636.

PACKED IN BARRELS OR BAGS, \$45 PER TON.

For the past thirty years we have been engaged in the manufacture of PURE GROUND BONE, our crude stock being gathered daily from the Butchers here, with whom we have yearly contracts. Having recently added additional and improved machinery, we are now prepared to fill all orders in our line with promptness and despatch. Would respectfully call attention to the annexed certificate:

BALTIMORE, March 1st, 1873.

Messrs. JOHN BULLOCK & SON, Baltimore, Md.

Gents—The following is the result of an analysis of your Ground Bone:

	PER CENT.
Moisture determined at 212° Fahrenheit,	5.44
Organic Matter,	39.16
Containing Nitrogen, 4.47 per cent., equal to Ammonia, 5.42 per cent.	
Inorganic Matter,	55.40
Containing Phosphoric Acid, 22.15 per cent., equal to Bone Phos. of Lime, 48.35 percent.	
Alumina, Oxide of Iron, and Carbonate and Fluoride of Lime not determined.	
Insoluble Residue, 3.61 per cent.	100.00

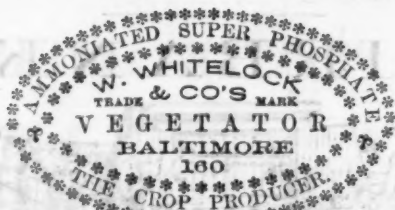
I am pleased to state that this is one of the richest and most available forms of Phosphate of Lime and Ammonia that can be found for agricultural purposes. The percentage of valuable ingredients named is in excess of the generality of fertilizers now being offered for sale. Respectfully, &c.,

P. B. WILSON,

Analytical and Consulting Chemist.

THE AMERICAN FARMER.

Whitelock's Vegetator,



FOR

CORN, OATS, POTATOES, WHEAT and TOBACCO.

\$3.50 PER TON.

\$1.54 PER BAG.

The VEGETATOR is prepared from dissolved bones, and is unsurpassed in quality by the high grade manures of Europe. It is ALWAYS UNIFORM IN QUALITY, ALWAYS PRODUCES A CROP, and having been extensively applied for many years without complaint, we are entitled to claim the Vegetator as A PERFECT MANURE. Thirty years' experience in the trade, we think, gives us the advantage over all competitors in the preparation of manure, and we ask this to be tested by the side of any which can be procured.

W. WHITELOCK & CO.

my-6t

44 SOUTH STREET, BALTIMORE.

To Corn Growers and Tobacco Planters.

J. J. TURNER & CO.'S AMMONIATED BONE SUPER-PHOSPHATE.

ANALYSIS.

Ammonia,	3.18
Soluble Phosphate of Lime,	23.91
Bone Phosphate of Lime,	3.15

Composed of the most concentrated materials, it is

Richer in Ammonia and Soluble Phosphates

THAN ANY OTHER FERTILIZER SOLD,

and is made with the same care and supervision as our EXCELSIOR, its only competitor. Uniform quality guaranteed. Fine and dry, in excellent order for drilling. Packed in bags.

PRICE \$50 PER TON.

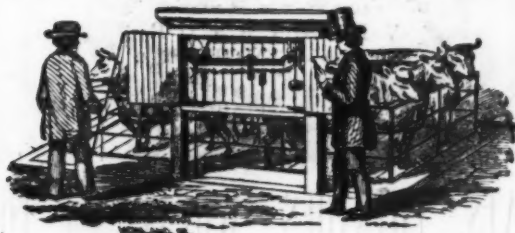
J. J. TURNER & CO.,

42 Pratt Street, Baltimore, Md.

ap-17

STANDARD SCALES.

FAIRBANKS'



Hay, Stock and Cattle Scales.

CAUTION!

The well-earned reputation of our SCALES has induced the makers of imperfect Balances to offer them as "Fairbanks' Scales," and purchasers have thereby, in many instances, been subject to fraud and imposition. If such makers were capable of constructing good Scales they would have no occasion to borrow our name.

Buy only the Genuine Fairbanks' Standard Scales.
STOCK SCALES, COAL SCALES, HAY SCALES, DAIRY SCALES, PLATFORM SCALES,
COUNTER SCALES, &c.

**FOR SALE ALSO,
ALARM CASH DRAWER.**

Till-Tapping Prevented!

Every Drawer WARRANTED!

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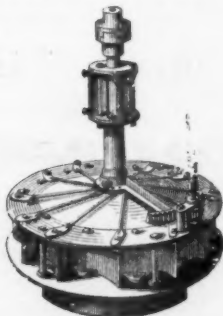
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